

---

# Benchmarking Robustness of Adaptation Methods on Pre-trained Vision-Language Models (Supplementary)

---

Shuo Chen<sup>1,3\*</sup> Jindong Gu<sup>2\*</sup> Zhen Han<sup>4 †</sup> Yunpu Ma<sup>1,3</sup> Philip Torr<sup>2</sup> Volker Tresp<sup>1</sup>

<sup>1</sup>Institute of Informatics, LMU Munich

<sup>2</sup>Department of Engineering Science, University of Oxford

<sup>3</sup>Siemens AG <sup>4</sup>Amazon

shuo.chen@campus.lmu.de, jindong.gu@eng.ox.ac.uk

1	<b>Contents</b>	
2	<b>1 Corruption Details</b>	<b>2</b>
3	1.1 Image Corruption Methods . . . . .	2
4	1.2 Text Corruption Methods . . . . .	2
5	<b>2 Model Implementations</b>	<b>4</b>
6	2.1 CLIP-BART/T5 . . . . .	4
7	2.2 Adaptation Methods . . . . .	5
8	2.3 Training and Evaluation . . . . .	7
9	<b>3 Limitations</b>	<b>7</b>
10	<b>4 Licensing</b>	<b>7</b>
11	<b>5 Impact</b>	<b>8</b>
12	<b>6 Additional Analysis</b>	<b>8</b>
13	6.1 BART vs. T5 language backbone . . . . .	8
14	6.2 The Influence of Adaptation Hyperparameters on Robustness . . . . .	8
15	6.3 Additional Results . . . . .	10

---

\*equal contribution

†Zhen Han’s contribution was prior to joining Amazon and does not represent Amazon’s views.

# 16 1 Corruption Details

## 17 1.1 Image Corruption Methods

18 We have incorporated 20 image corruption methods (Fig. 1) following [6, 2, 15] which can be  
19 categorized into 5 categories **noise**, **blur**, **weather**, **digital**, and **extra**. We also introduce 5 levels of  
20 severity (Fig. 2) to image corruption methods except for *blank* corruption.

21 **Noise** There are 4 different noises used in this study, namely *Impulse*, *Gaussian*, *Shot*, and *Speckle*.  
22 *Impulse noise* mimics the corruption caused by bit errors by introducing a mixture of salt and pepper  
23 noise, with varying intensities such as 0.03, 0.06, 0.09, 0.17, and 0.27. *Gaussian noise* simulates  
24 corruptions due to low-lighting conditions by pixel value normalization and normal noise addition.  
25 The intensity of this noise is scaled according to severity, with values of 0.08, 0.12, 0.18, 0.26, and  
26 0.38. *Shot noise* simulates electronic noise caused by discrete light and is also called Poisson noise.  
27 *Speckle noise* is an additive noise where larger noise will be added if the original pixel value is larger.

28 **Blur** *Zoom blur* is observed when the camera swiftly moves toward an object. It blurs toward the  
29 center of the frame. *Defocus blur* occurs when the image is out of focus and its severity is defined by  
30 the disk radius convolved over the image ranging from (3, 0.1), (4, 0.5), (6, 0.5), (8, 0.5), (10, 0.5).  
31 *Motion blur* occurs when the camera is moving quickly. The blurring effect is created by a kernel with  
32 different radius and sigma ranging from (10, 3), (15, 5), (15, 8), (15, 12), (20, 15). *Frosted Glass*  
33 *blur* occurs when the glass of windows or panels frosts. *Gaussian blur* generates blurred pixels by a  
34 weighted average of its neighbors. The farther the neighbors are, the lower the weight in the average  
35 is.

36 **Digital** *JPEG* is a lossy image compression format that converts the original picture to JPEG format  
37 with quality ranging from 25, 18, 15, 10, 7 given different severity. *Contrast* simulates corruptions  
38 caused by the lighting conditions and object's color. *Elastic* stretches small image regions for  
39 stretching effects. *Spatter* appears when the lens is occluded by rain or mud. *Pixelate* transforms the  
40 original images into a small number of large pixels.

41 **Weather** *Snow* mimics the visual obstruction caused by precipitation. *Frost* occurs when lenses are  
42 covered by ice crystals. *Fog* obscures the object and is rendered by the diamond-square algorithm.  
43 *Brightness* adds a bright effect to the image simulating daylight.

44 **Extra** we introduce a new corruption method called *blank* that sets all pixel values to 255, i.e.  
45 turning the original image into a blank picture.

## 46 1.2 Text Corruption Methods

47 We have included 35 text corruptions methods following [19, 15, 2] which corrupt on 3 levels (e.g.  
48 character, word, and sentence level) and can be categorized into 3 main categories, 6 sub-categories.

49 **Character Modification.** *Character modification* simulates common mistakes during typing and  
50 corrupts the text on a character level and contains 9 methods, namely *OCR*, *Punct*, *Typos*, *Keyboard*,  
51 *Spelling Error*, *char random insert*, *char random replace*, *char random swap*, *char random delete*.  
52 *OCR* replaces a character based on common Optical Character Recognition (OCR) errors. *Keyboard*  
53 substitutes original characters based on keyboard distance.

54 **Text Style Transformation.** Methods in the *text style* category modify the text on a sentence level  
55 and transform the sentence style to a target one, such as turning the original sentence to *passive*,  
56 *formal*, *causal*, to *double negative*, and changing the *tense*.



Figure 1: We introduce 20 corruption methods to image data following the methods in [6]. Except for the blank corruption, each type of corruption has five levels of severity. In total, there are 96 different corruptions, as shown in Appendix 1

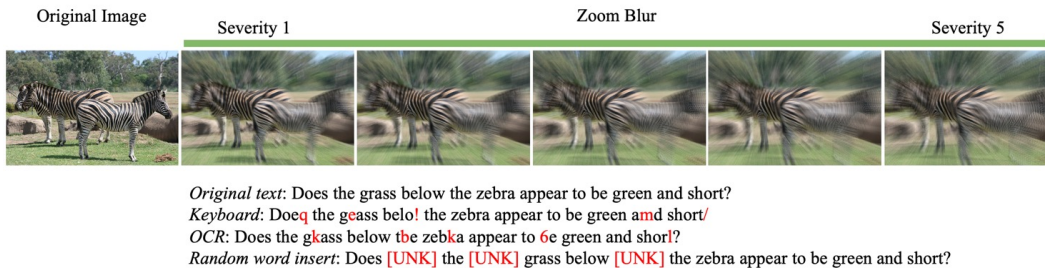


Figure 2: Examples of image and text corruptions. The top row shows an original image from GQA and images corrupted by *zoom blur* with 5 levels of severity. The second row presents text corruptions on the original texts where the red sign indicates the corrupted parts. More examples are shown in supplementary material.

57 **Text Addition.** *Text addition* inserts additional words to the original text. *InsertAdv* adds an adverb  
 58 before each verb. *AppendIrr* adds irrelevant phrases to the original texts. *Random Insert* randomly  
 59 inserts token [UNK] to the original texts.

60 **Text Drop based on POS.** *Text drop* transforms the text on a word level based on POS tagging  
 61 [19]. There are methods of dropping nouns (*DropNN*), verbs (*DropVB*), dropping both nouns and  
 62 verbs (*Drop VB & NN*), dropping random nouns and verbs (*Drop Rand NN*, *Drop Rand VB*), keeping  
 63 only nouns (*Only NN*), keeping only verbs (*Only VB*), keeping both (*Only NN & VB*).

64 **Text Drop based on Position.** According to the word position, there are methods of dropping the  
 65 first (*Drop First*), dropping the last (*Drop Last*), dropping both the first and the last (*Drop First and*  
 66 *Last*), shuffling word order (*Shuffle Order*), and randomly removing words (*Random Delete*).

67 **Text Swap.** Under the category of *text swap*, we can replace words randomly or with synonyms  
 68 by word embedding (*SwapSyn Word Embd*) and WordNet [14] (*SwapSyn WordNet*). We also deploy

Table 1: Image Corruption Methods

Category	Corruption Method	Severity
<b>Noise</b>	Impulse	5
	Gaussian	5
	Shot	5
	Speckle	5
<b>Blur</b>	Zoom	5
	Defocus	5
	Motion	5
	Frosted Glass	5
	Gaussian Blur	5
<b>Digital</b>	JPEG	5
	Contrast	5
	Elastic	5
	Saturate	5
	Spatter	5
	Pixelate	5
<b>Weather</b>	Snow	5
	Frost	5
	Fog	5
	Brightness	5
<b>Extra</b>	Blank	1
<b>5 Category</b>	20 Methods	96 Severity

69 back translation (*Back Trans*) from [19], which first translates English into French and then translates  
70 it back to English. *Randwom Swap* randomly swaps words position.

71 In addition to the above corruptions, Qiu et al. proposed in [15] that we should ensure the corrupted  
72 text has the same semantics as the original one to make sure the image-text pairs remain meaningful.  
73 We follow this setting and use the same fidelity guarantee mechanism as [15].

## 74 2 Model Implementations

### 75 2.1 CLIP-BART/T5

76 CLIP-BART/T5 [17], a combination of CLIP and BART/T5, follows VL-T5 [4] which unifies VL  
77 tasks to a text-generation problem. Specifically, given a pair of an image  $x^I$  and a sentence  $x^S$ , e.g. a  
78 picture and corresponding question texts in VQA, as the input to the model, CLIP-BART/T5 aims to  
79 maximize the agreement between the prediction and text label of  $M$  tokens  $\mathbf{y} = (y_1, y_2, \dots, y_M)$ .  
80 The primary generative model is an encoder-decoder language model, parameterized by  $\theta^L$ . Visual  
81 representation from input images is extracted from a CLIP and a visual projection layer, parameterized  
82 by  $\theta^V$  and  $\theta^{V \rightarrow L}$  respectively. The concatenation of visual representation and sentence representation  
83 is fed into the encoder-decoder language model. The training goal is to minimize the cross-entropy  
84 loss [17]:

$$\begin{aligned}
 l(\mathbf{x}^I, \mathbf{x}^S, \mathbf{y}; \theta^L, \theta^V, \theta^{V \rightarrow L}) & \\
 &= \text{CE}(f_{\theta^L}(\mathbf{x}^{V \rightarrow L}, \mathbf{x}^S), \mathbf{y}) \\
 &= - \sum_{i=1}^M y_i \log(f_{\theta^L}(\mathbf{x}^{V \rightarrow L}, \mathbf{x}^S)_i),
 \end{aligned} \tag{1}$$

85 where  $f_{\theta}$  means a function parameterized by  $\theta$ ,  $\mathbf{x}^{V \rightarrow L}$  is the projected visual representation.

Table 2: Text Corruption Methods

Category	Sub Category	Level	Corruption Method	Severity
Natural	Char Modification	character	OCR	5
		character	Punct	1
		character	Typos	5
		character	Keyboard	5
		character	Spelling Error	5
		character	char random insert	5
		character	char random replace	5
		character	char random swap	5
	character	char random delete	5	
	Text Style	sentence	Passive	1
		sentence	Tense	1
		sentence	Formal	1
		sentence	Casual	1
		sentence	Active	1
	Text Addition	sentence	Double Neg	1
word		InsertAdv	1	
word		Appendlrr	1	
Synthetic	Drop Text based on POS tag	word	Random Insert	5
		word	Drop NN	1
		word	Drop Rand NN	1
		word	Drop VB	1
		word	Drop VB & NN	1
		word	Only NN	1
		word	Only VB	1
		word	Only NN & VB	1
	word	Drop Rand VB	1	
	Positional Drop	word	Drop First	1
		word	Drop Last	1
		word	Drop First and Last	1
		sent	Shuffle Order	1
		word	Random Delete	5
	Machine	Text Swap	word	SwapSyn Word Embd
word			SwapSyn WordNet	5
sentence			Back Trans	1
word			Random Swap	5
			35 methods	87 levels of severity

86 The unified structure is beneficial to multi-task training where a universal dataset  $\mathcal{D}$  from  $N$  VL  
87 datasets is constructed and used to train the VL model. Under such a scenario, the parameters are  
88 optimized by minimizing the averaging loss on  $\mathcal{D}$  [17]:

$$\begin{aligned} \mathcal{L}(\mathcal{D}; \theta^L, \theta^V, \theta^{V \rightarrow L}) \\ = \frac{1}{|\mathcal{D}|} \sum_{(\mathbf{x}^I, \mathbf{x}^S, \mathbf{y}) \in \mathcal{D}} l(\mathbf{x}^I, \mathbf{x}^S, \mathbf{y}; \theta^L, \theta^V, \theta^{V \rightarrow L}) \end{aligned} \quad (2)$$

## 89 2.2 Adaptation Methods

90 **Full fine-tuning** directly updates the whole  $\theta$  on  $\mathcal{D}$  and becomes prohibitive due to the rapidly  
91 growing model size. For instance, simply loading a GPT-3 language model with 175B parameters as  
92 the VL model backbone would require 700GB of memory<sup>3</sup>. Therefore, the following more efficient

<sup>3</sup> $(175 \times 10^9) \times 4(\text{bytes}) \times 10^{-9} = 700\text{GB}$

Table 3: We deploy eleven distinct adaptation methods in total.

Type	Method
Full Fine-tuning	Full Fine-tuning
Adapter [8]	Single Adapter Half-shared Adapters Multiple Adapters
Compacter [11]	Single Compacter Multiple Compacter
Hyperformer [13]	Hyperformer
LoRA [9]	Single LoRA Multiple LoRA
Soft Prompt [12]	Single Prompt Multiple Prompts

93 adaptation methods are developed to achieve comparable performance while optimizing only a few  
94 parameters.

95 **Prompt-based adaptation** modifies the input  $\mathbf{x}$  to the model  $F$  by either concatenating a trainable  
96 prefix (Soft Prompt) [12] or a manually designed prefix [1]. For the given input  $\mathbf{x} = \{x_1, \dots, x_n\}$   
97 with  $n$  tokens, the pre-trained model will first form an embedding matrix  $\mathbf{X} \in \mathbb{R}^{n \times d}$  where  $d$  is the  
98 dimension of the embedding space. Soft-prompts [12] are then represented as a learnable parameter  
99  $\mathbf{P} \in \mathbb{R}^{p \times d}$  where  $p$  is the length of the prompt. Next,  $\mathbf{P}$  is concatenated with the original embedded  
100 input  $\mathbf{X}$  to form a new single matrix defined as  $[\mathbf{P}; \mathbf{X}] \in \mathbb{R}^{(p+n) \times d}$ . During adaptation, the model is  
101 trained to maximize the probability of the desired output while only updating  $\mathbf{P}$ .

102 **LoRA** [9] also freezes the pre-trained model parameters  $\theta$ , but it utilizes low-rank decomposition  
103 matrices to update gradients. For an intermediate model parameter  $\theta_0 \in \mathbb{R}^{d \times k}$ , which can be the  
104 parameters from one self-attention module in the transformer architecture, its update is represented  
105 by a low-rank decomposition as shown in Formula 3.  $\theta_0$  is frozen, whereas  $B$  and  $A$  contain trainable  
106 parameters while adapting.

$$\theta_0 + \Delta\theta = \theta_0 + BA, B \in \mathbb{R}^{d \times r}, A \in \mathbb{R}^{r \times k}, r \ll \min(d, k). \quad (3)$$

107 **Adapter-based adaptation** inserts small modules between parameters in  $\theta$  and modifies the interme-  
108 diate learning process. Variants of adapter-based methods differ in the insertion manner. Adapters[8]  
109 consists of a pair of downsampling and upsampling layers and a residual connection. Suppose the  
110 original input to an intermediate layer  $\theta_0$  in model  $\theta$  is  $\mathbf{x}_0 \in \mathbb{R}^{d_0}$ , adapters insert a downsampling  
111 layer  $\theta^D \in \mathbb{R}^{d_0 \times d_1}$  and an upsampling layer  $\theta^U \in \mathbb{R}^{d_1 \times d_0}$  where  $d_0, d_1$  are dimensions of the hidden  
112 embeddings. The output after injecting adapters is defined in Formula 4 where  $\sigma(\cdot)$  is an activation  
113 function such as GELU [7].

$$h = f_{\theta^U}(\sigma(f_{\theta^D}(\mathbf{x}_0))) + \mathbf{x}_0 \quad (4)$$

114 **Compacter** [11] is based on the mechanism of adapters [8], but it utilizes matrix decomposition and  
115 parameter sharing to further reduce redundant parameters in adapters. It introduces *parameterized*  
116 *hypercomplex multiplication* (PHM) layers (Formula 5), which decompose the layer in the adapter by  
117 Kronecker products. Compacter also shares the parameter of  $A_i$  across all layers and decomposes  
118  $B_i$  even further with low-rank decomposition. However, as found in [17], such sharing and further  
119 decomposition severely decreases the VL performance. In our study, we only use PHM layers.

$$\theta^D = \sum_{i=1}^k A_i \otimes B_i, A_i \in \mathbb{R}^{k \times k}, B_i \in \mathbb{R}^{\frac{d_0}{k} \times \frac{d_1}{k}} \quad (5)$$

120 **Hyperformer** [13] also aims to reduce redundant parameters in adapters. It relies on a hyper-  
121 network that is shared across tasks to generate the weights in adapters given a task index and a

122 layer index. The hyper-network maintains learnable embeddings for each task and each layer. For  
 123  $N_T$  tasks and  $N_L$  layers, the  $d_e$ -dimensional embeddings can be denoted as  $\mathbf{t}_1, \dots, \mathbf{t}_{N_T} \in \mathbb{R}^{d_e}$ ;  
 124  $\mathbf{l}_1, \dots, \mathbf{l}_{N_L} \in \mathbb{R}^{d_e}$ . The Hyperformer consists of a task projector  $\theta^T \in \mathbb{R}^{(d_e+d_e) \times d_p}$  and a hyper-  
 125 network  $\theta^H \in \mathbb{R}^{d_p \times (d_0 \times d_1 + d_1 \times d_0)}$ , and generates an adapter’s weights in the  $i^{th}$  layer for the  $j^{th}$   
 126 task following Formula 6.

$$[\theta^D, \theta^U] = f_{\theta^H} (f_{\theta^T}([\mathbf{t}_j, \mathbf{l}_i])) \quad (6)$$

127 **Adaptation shared over tasks** is inspired by Hyperformer and proposed in [17] which aims to exploit  
 128 similar information shared across multiple tasks and to reduce redundant parameters. For vanilla  
 129 adapters in a multi-task setting with  $N_T$  tasks, the collection of all inserted adapter modules can be  
 130 denoted as  $\Theta = \{\Theta^D, \Theta^U\}$  where  $\Theta^D$  ( $\Theta^U$ ) stands for the subset of downsampling (upsampling)  
 131 layers in adapters. The straightforward application is to train the adaptation modules per task, so  
 132 we have independent  $\{\Theta_i^D, \Theta_i^U\}$  for the  $i^{th}$  task, dubbed as **Multiple Adapters**. The same goes for  
 133 other adaptation methods. By training one prompt, low-rank weights, and compacter layer for each  
 134 task, we obtain **Multiple Prompts**, **Multiple LoRA**, and **Multiple Compacter** respectively. We can  
 135 also train only one set of adapter layers for all tasks, and we have **Single Adapter** where  $\Theta_i^D = \Theta_j^D$   
 136 and  $\Theta_i^U = \Theta_j^U, i \neq j$ . Also, if we use the same prompts, low-rank weights, and compacter layers,  
 137 we have **Single Prompt**, **Single LoRA**, and **Single Compacter** respectively. For adapters, we can  
 138 make parts of the weights shareable by making  $\Theta_i^D = \Theta_j^U, i \neq j$  and. In this way, the task-specific  
 139 information of  $i^{th}$  can still be learned by the rest  $\Theta_i^U$ . Such sharing mechanism is called **half-shared**  
 140 **adapter**. Lastly, Hyperformer already shares information from multiple tasks and therefore does not  
 141 have such extensions.

## 142 2.3 Training and Evaluation

143 We follow the same experimental and hyperparameter settings as [17]. CLIP-ResNet101 is the  
 144 vision encoder that takes the resized  $224 \times 224$  images as input. The  $7 \times 7$  grid features in the  
 145 last convolutional layer are extracted as visual features and are downsampled to  $6 \times 6$  by adaptive  
 146 maximum pooling.  $BART_{base}$  and  $T5_{base}$  are both studied in this work as encoder-decoder language  
 147 models. During training, AdamW is the optimizer along with a linear decay scheduler. Models are  
 148 trained for 20 epochs, and the learning rate increases from 0 to the highest learning rate in the first  
 149 2 epochs. Training batch sizes are set as 500 and 250 for CLIP-BART and CLIP-T5 respectively.  
 150 Models are trained in a multi-task setting where the training dataset includes all training split from 4  
 151 VL datasets. After training, we first evaluate the clean performance. Specifically, accuracy on the  
 152 Karpathy-test split is evaluated for VQAv2. For GQA, accuracy on the test-dev split is evaluated,  
 153 and accuracy on the test-P split is used for NLVR<sup>2</sup>. In image captioning, we use CIDEr [18] on the  
 154 Karpathy-test split. Then, we evaluate the corrupted performance on the corresponding corrupted  
 155 test split from each dataset and calculate the relative robustness. All the training and evaluations are  
 156 conducted on LRZ AI Systems at the Leibniz Supercomputing Centre of the Bavarian Academy of  
 157 Sciences and Humanities.

## 158 3 Limitations

159 The limitations of this work mainly include 1) the adoption of simulated noise instead of real-world  
 160 data due to the difficulty to obtain real-world corruptions, 2) the analysis is on a limited number of  
 161 multimodal models due to the availability of usable code, model weights, and the massive experiments,  
 162 3) the experiments require heavy GPU usage to pre-train vision-language models.

## 163 4 Licensing

164 All the models and datasets used in this study are publicly available. The code for model VL-  
 165 T5(BART) and CLIP-T5(BART) have the MIT License and the code for Hyperformer and Soft  
 166 Prompt has the Apache 2.0 License. Our benchmark datasets are built upon 4 well-known and public

Table 4: Relative robustness of adaptation methods based on CLIP-T5 against image (top) and text (bottom) corruptions.

Adaptation method	VQAv2		GQA		NLVR <sup>2</sup>		COCO Caption	
	Acc (%)	RR (%)	Acc (%)	RR (%)	Acc (%)	RR (%)	CIDEr	RR (%)
Full Fine-tuning	66.29	85.11 $\pm$ 5.10	56.82	87.48 $\pm$ 0.04	74.06	89.36 $\pm$ 0.04	111.50	69.32 $\pm$ 0.14
Multiple Adapters	66.15	85.45 $\pm$ 4.84	55.66	87.70 $\pm$ 0.04	51.94	–	112.15	67.65 $\pm$ 0.15
Single Adapter	66.41	85.19 $\pm$ 5.16	55.90	78.57 $\pm$ 0.04	72.78	88.70 $\pm$ 0.05	111.70	68.52 $\pm$ 0.14
Hyperformer	65.18	<b>86.02</b> $\pm$ 4.87	54.65	<b>89.33</b> $\pm$ 0.04	70.56	<b>91.07</b> $\pm$ 0.05	110.65	<b>70.48</b> $\pm$ 0.13
Multiple Compacters	65.50	85.88 $\pm$ 4.86	54.68	88.09 $\pm$ 0.04	52.63	–	113.20	67.96 $\pm$ 0.14
Single Compacter	65.98	85.56 $\pm$ 5.07	55.33	80.57 $\pm$ 0.04	71.47	90.04 $\pm$ 0.04	111.61	69.15 $\pm$ 0.14

Adaptation Method	VQAv2		GQA		NLVR <sup>2</sup>	
	Acc (%)	RR (%)	Acc (%)	RR (%)	Acc (%)	RR (%)
Full fine-tuning	66.29	72.52 $\pm$ 25.29	56.82	64.27 $\pm$ 25.75	74.06	87.67 $\pm$ 10.74
Multiple Adapters	66.15	<b>76.68</b> $\pm$ 21.21	55.66	62.33 $\pm$ 25.92	51.94	–
Single Adapter	66.41	75.89 $\pm$ 21.20	55.90	63.30 $\pm$ 19.40	72.78	87.79 $\pm$ 10.68
Hyperformer	65.18	76.51 $\pm$ 20.80	54.65	66.96 $\pm$ 24.43	70.56	<b>89.12</b> $\pm$ 10.06
Multiple Compacters	65.50	76.39 $\pm$ 21.14	54.68	<b>67.66</b> $\pm$ 22.69	52.63	–
Single Compacter	65.98	76.16 $\pm$ 21.16	55.33	64.19 $\pm$ 20.22	71.47	88.70 $\pm$ 9.93

167 available VL datasets, namely VQAv2 [5], GQA [10], NLVR<sup>2</sup> [16], and MSCOCO [3]. We also  
 168 publicize our benchmark datasets, corruption codes, and benchmark codes under MIT License.

## 169 5 Impact

170 From our understanding, there are no negative societal impacts of our study. This study aims  
 171 to investigate the robustness of multimodal adaptation methods and facilitate future research and  
 172 real-world applications.

## 173 6 Additional Analysis

### 174 6.1 BART vs. T5 language backbone

175 We compared the robustness of CLIP-BART and CLIP-T5 models in Table 5 to observe differences in  
 176 performance. Generally, adaptations from CLIP-BART showed better robustness on GQA, NLVR<sup>2</sup>,  
 177 and COCO Caption against image and text corruptions. Specifically, all adaptation methods on CLIP-  
 178 BART had higher robustness against text corruptions on the GQA dataset. For robustness against  
 179 image corruptions, all adaptation methods with CLIP-BART, except for multiple adapters, achieved  
 180 higher relative robustness scores. In contrast, CLIP-T5-based adaptations were more robust against  
 181 image corruptions on VQAv2, while CLIP-BART showed more robustness against text corruptions.  
 182 This may be due to the different language encoders used in BART and T5. Among all adaptation  
 183 methods, Hyperformer seems to be a good choice for CLIP-T5, as it achieved better robustness on  
 184 VQAv2, NLVR<sup>2</sup>, and COCO Caption. A single adapter would likely be a more robust adaptation  
 185 method when combined with CLIP-BART, as it showed better robustness on all datasets and against  
 186 both types of corruption.

### 187 6.2 The Influence of Adaptation Hyperparameters on Robustness

188 To investigate the influence of parameter size on robustness, we conduct experiments on 6 adaptation  
 189 methods, namely Single Prompt, Multiple Prompts, Single Adapter, Single Compacter, and Single  
 190 LoRA, with various parameter sizes. For each setting, we adapt the model on multitask datasets given  
 191 pre-trained CLIP and BART (T5) and test the relative robustness.

192 For prompt tuning, the prompt length  $p$  defined in Section 2.2 can be 20, 40, 60, and 80. The  
 193 position of prompt embedding can be *front*, *middle*, and *back*. It specifies the prompt position in



Table 5: RR(%) of adaptation methods based on CLIP-BART and CLIP-T5 against image (up) and text (down) corruptions with severity 5. The better relative robustness values for each comparison pair are in bold.

Adaptation Method	VQAv2		GQA		NLVR <sup>2</sup>		COCO Caption	
	BART	T5	BART	T5	BART	T5	BART	T5
Full finetuning	84.86	<b>85.11</b>	<b>89.20</b>	87.48	<b>90.34</b>	89.36	68.40	<b>69.32</b>
Multiple adapters	85.33	<b>85.45</b>	86.16	<b>87.70</b>	<b>92.02</b>	–	<b>68.72</b>	67.65
Single adapter	<b>85.76</b>	85.19	<b>82.49</b>	78.57	<b>90.04</b>	88.70	<b>68.68</b>	68.52
Hyperformer	85.38	<b>86.02</b>	<b>90.05</b>	89.33	90.13	<b>91.07</b>	68.74	<b>70.48</b>
Multiple compacters	85.65	<b>85.88</b>	<b>88.89</b>	88.09	<b>91.33</b>	–	<b>68.67</b>	67.96
Single compacter	85.47	<b>85.56</b>	<b>82.62</b>	80.57	<b>92.04</b>	90.04	<b>69.92</b>	69.15

Adaptation method	VQAv2		GQA		NLVR <sup>2</sup>	
	BART	T5	BART	T5	BART	T5
Full Fine-tuning	<b>73.65</b>	72.52	<b>66.92</b>	64.27	87.06	<b>87.67</b>
Multiple Adapters	76.62	<b>76.68</b>	<b>66.93</b>	62.33	<b>90.14</b>	–
Single Adapter	<b>77.64</b>	75.89	<b>67.47</b>	63.30	<b>88.49</b>	87.79
Hyperformer	75.06	<b>76.51</b>	<b>70.30</b>	66.96	87.27	<b>89.12</b>
Multiple Compacters	<b>77.10</b>	76.39	<b>67.39</b>	67.66	<b>90.00</b>	–
Single Compacter	<b>77.17</b>	76.16	<b>67.90</b>	64.19	<b>90.10</b>	88.7

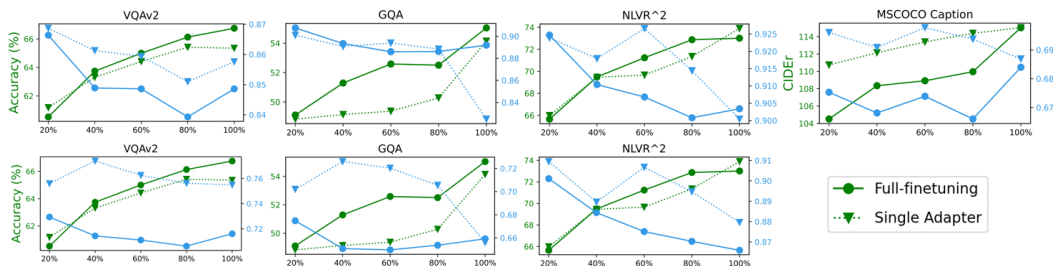


Figure 3: Performance and relative robustness of full-finetuning and single adapter on CLIP-BART given different size of adaptation dataset. The first row shows results given image corruptions and the second is from text corruptions. Green lines stand for performance in each task and the blue is robustness. X-axis shows the random subset ratio of training dataset during adaptation, ranging from 20% to 100%.

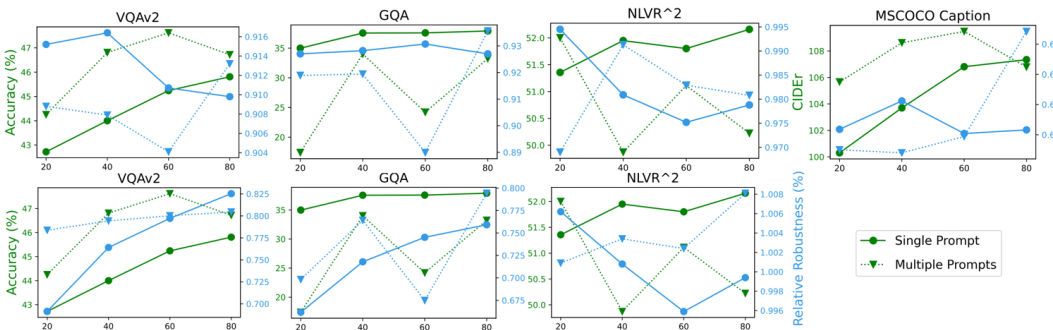


Figure 4: Performance and relative robustness from prompt adaptations with different prompt lengths on CLIP-BART. The top row shows the robustness against image corruptions and the bottom row is results against text corruptions. Blue lines stand for performance on each task and green lines represent relative robustness.

194 the concatenated input to the encoder-decoder generative model. For example, *front* position means  
195 that the prompt embedding is at the beginning of the concatenation; *middle* position means the  
196 concatenation starts with visual embedding, then prompt embedding and the textual embedding  
197 is at the end. We also choose different embedding dimensions for adapter-based methods. The  
198 dimension  $d_1$  of adapter layers varies from  $\{96, 64, 48, 24\}$ . The dimension  $r$  of LoRA’s low-rank  
199 decomposition layer can be  $\{32, 64, 128, 256\}$

200 **Prompt embedding length** Prompt-based adaptation methods have attracted more attention because  
201 they remove the burden of tuning any parameters in the pre-trained model. We inspect their robustness  
202 given different embedding lengths and sharing settings. We adjust the soft prompt length added to the  
203 concatenated embeddings and evaluate the performance along with the relative robustness. The results  
204 conducted on CLIP-BART are shown in Figure 4. We could see a steady increase in the performance  
205 on four tasks with longer prompt lengths which proves that prompt methods perform better given  
206 more parameters. Regarding relative robustness, such a steady increase does not apply to all tasks  
207 and longer soft prompts do not ensure better relative robustness. For instance, the relative robustness  
208 of single prompt drops with the increase of prompt length on VQAv2. Its relative robustness keeps  
209 relatively the same on GQA and MSCOCO Caption given image corruptions. We could also notice  
210 that for text corruptions, prompt methods gain better robustness on VQAv2 and GQA.

211 **Task-specific vs. Universal Prompt.** We conduct experiments using both single prompt and multiple  
212 prompts where the first shares a universal prompt embedding across all tasks and the second utilizes  
213 a specific prompt for each task. The single prompt has better performance on GQA and NLVR<sup>2</sup>  
214 whereas multiple prompts show better performance on VQAv2 and MSCOCO Caption. We observe  
215 that with less prompt embedding, a universal prompt is more robust against image corruptions but  
216 given longer prompt embedding, task-specific prompts regain the robustness and surpass the universal  
217 prompt.

### 218 6.3 Additional Results

219 The relative robustness of adaptation methods based on CLIP-T5 is presented in Table 4. Figure 4  
220 presents the performance and relative robustness of full-finetuning and single adapter on CLIP-BART  
221 given different sizes of adaptation datasets. Table 8 and 7 present the corruption results from each  
222 image corruption method and each text corruption category. Table 10 to Table 57 present detailed  
223 results on various severity levels.



Table 8: Relative robustness of adaptation methods based on CLIP-BART against image corruptions.

Adaptation method	Clean	Noise					Blur					Digital					Weather					Ave	RR (%)
		Impulse	Gaussian	Shot	Speckle	Zoom	Defocus	Motion	Glass	Gaussian	JPEG	Contrast	Elastic	Pixelate	Spatter	Saturate	Snow	Frost	Fog	Brightness			
Full Finetuning	111.5	79.113	79.032	82.265	91.788	37.158	85.321	75.387	65.115	81.871	98.817	61.11	69.818	62.23	73.373	97.049	71.716	70.632	84.015	102.756	77.29	0.693	
Multiple Adapters	112.149	79.067	78.336	82.044	91.293	33.035	83.47	73.385	63.347	81.731	98.845	59.487	67.879	59.806	70.26	96.107	69.469	68.513	82.314	103.015	75.86	0.676	
Single Adapter	111.7	78.788	79.632	81.986	91.411	37.009	83.256	74.122	64.263	80.347	98.008	60.239	68.099	60.312	71.794	96.806	70.457	70.364	83.999	103.175	76.53	0.685	
Hyperformer	110.649	79.968	79.361	83.399	92.835	41.287	85.348	76.428	65.662	82.076	97.952	61.923	70.079	62.167	74.226	97.323	70.651	71.889	85.099	104.118	77.99	0.705	
Single Compacter	111.608	79.424	78.576	83.25	91.25	36.829	83.726	75.171	65.19	80.959	98.517	61.199	70.609	60.431	73.608	97.211	71.876	71.582	83.624	103.316	77.18	0.692	
Multiple Compacters	113.2	79.686	79.894	83.068	92.35	38.61	84.081	75.606	64.191	81.52	99.056	61.73	69.273	59.018	71.456	96.303	69.515	69.553	83.808	102.703	76.93	0.68	

Adaptation method	Clean	Noise					Blur					Digital					Weather					Ave	RR (%)
		Impulse	Gaussian	Shot	Speckle	Zoom	Defocus	Motion	Glass	Gaussian	JPEG	Contrast	Elastic	Pixelate	Spatter	Saturate	Snow	Frost	Fog	Brightness			
Full Finetuning	56.82	50.08	49.849	50.405	51.39	44.665	51.233	50.557	47.408	50.755	53.331	47.267	47.973	47.194	49.809	51.542	47.798	48.394	50.262	53.53	49.71	0.875	
Multiple Adapters	55.66	49.412	49.507	49.905	51.511	44.188	50.04	48.903	46.478	49.316	52.131	46.375	46.852	46.748	48.489	51.073	47.122	47.925	49.141	52.353	48.81	0.877	
Single Adapter	55.9	44.657	43.91	44.586	46.828	39.06	45.58	44.8	41.326	44.785	47.241	41.151	42.36	41.684	43.624	45.635	42.614	42.622	44.315	47.75	43.92	0.786	
Hyperformer	54.65	49.339	49.292	49.491	50.787	44.101	49.936	50.207	46.247	49.618	52.282	46.868	46.995	46.875	48.386	50.668	47.178	47.758	48.728	52.576	48.82	0.893	
Single Compacter	55.33	44.3	44.355	44.721	47.321	39.593	46.589	45.556	42.63	45.492	48.06	41.684	43.155	42.24	43.791	47.106	43.338	43.56	44.689	48.847	44.58	0.806	
Multiple Compacters	54.68	48.704	48.545	49.141	50.31	43.163	49.682	49.547	45.913	48.593	51.36	45.834	46.311	45.429	47.496	50.167	47.066	47.368	49.277	51.288	48.17	0.881	

Adaptation method	Clean	Noise					Blur					Digital					Weather					Ave	RR (%)
		Impulse	Gaussian	Shot	Speckle	Zoom	Defocus	Motion	Glass	Gaussian	JPEG	Contrast	Elastic	Pixelate	Spatter	Saturate	Snow	Frost	Fog	Brightness			
Full Finetuning	74.06	66.829	66.844	66.815	67.963	57.586	67.805	67.059	65.968	66.198	71.107	61.303	67.073	61.432	64.389	66.14	68.911	70.36	66.456	67.131	66.18	0.894	
Multiple Adapters	51.94	50.007	50.409	49.806	50.538	49.835	50.553	50.395	50.237	50.022	53.064	49.333	50.696	49.519	50.251	50.452	49.835	52.591	51.414	52.117	50.58	0.974	
Single Adapter	72.78	64.935	65.05	65.021	66.485	55.06	66.284	65.222	65.667	65.624	70.001	58.031	66.7	59.064	62.911	63.959	66.801	69.212	64.576	65.896	64.55	0.87	
Hyperformer	70.56	65.222	65.05	64.863	65.907	55.634	65.925	65.265	63.987	65.136	69.241	59.867	65.911	58.418	63.026	63.413	66.083	67.891	64.719	65.566	64.26	0.911	
Single Compacter	71.47	63.916	64.145	64.303	66.786	56.107	66.6	64.963	64.978	64.82	68.537	59.509	65.982	59.811	63.054	63.829	66.6	68.738	64.676	65.322	64.35	0.89	
Multiple Compacters	52.63	49.447	49.218	49.39	49.677	49.103	49.663	50.05	49.447	49.49	51.658	48.959	50.395	49.318	49.476	49.419	50.639	52.131	50.208	50.179	49.89	0.948	

Adaptation method	Clean	Noise					Blur					Digital					Weather					Ave	RR (%)
		Impulse	Gaussian	Shot	Speckle	Zoom	Defocus	Motion	Glass	Gaussian	JPEG	Contrast	Elastic	Pixelate	Spatter	Saturate	Snow	Frost	Fog	Brightness			
Full Finetuning	66.29	55.83	56.08	57.13	59.83	49.35	58.93	57.06	53.91	57.92	62	50.96	55.85	53.08	54.57	54.33	57.32	62.33	55.74	59.76	56.42	0.851	
Multiple Adapters	66.15	56.02	56.02	57.09	59.79	50.23	58.89	57.25	54.04	57.69	61.83	51.06	55.8	53.45	54.86	54.89	57.42	62.4	55.55	59.75	56.53	0.855	
Single Adapter	66.41	56.48	56.4	57.21	59.94	49.58	59.16	57.21	54.04	57.69	61.9	50.97	55.63	52.94	54.49	54.5	57.55	62.74	55.98	60.24	56.57	0.852	
Hyperformer	65.18	55.6	55.48	56.43	59.19	49.67	58.37	56.9	53.95	57.18	61.2	50.72	55.47	52.58	54.16	54.22	57.1	61.93	55.58	59.21	56.07	0.86	
Single Compacter	65.98	55.93	55.97	57.1	59.57	49.43	59.11	56.82	53.99	57.76	61.81	50.86	55.73	52.89	54.95	55.07	57.3	62.53	55.91	59.83	56.45	0.856	
Multiple Compacters	65.5	55.86	55.9	56.64	59.3	50.14	58.85	57.1	54.24	57.44	61.67	50.88	55.81	53.11	53.96	54.04	56.8	62.01	55.55	59.44	56.25	0.859	

Table 9: Relative robustness of adaptation methods based on CLIP-T5 against text corruptions grouped by corruption levels.

Adaptation method	Clean	Char-level	Char-level RR	Word-level	Word-level RR	Sentence-level	Sentence-level RR	RR
Full finetuning	56.82	21.13	0.372	38.23	0.673	53.54	0.942	0.643
Multiple adapters	55.66	20.43	0.367	35.82	0.644	52.07	0.936	0.623
Single adapter	55.9	23.99	0.429	36.69	0.656	47.77	0.855	0.633
Hyperformer	54.65	22.69	0.415	38.19	0.699	51.89	0.949	0.67
Single compacter	55.33	23.5	0.425	36.88	0.667	48.64	0.879	0.642
Multiple compactors	54.68	24.28	0.444	38.14	0.698	51.99	0.951	0.677

Adaptation method	Clean	Char-level	Char-level RR	Word-level	Word-level RR	Sentence-level	Sentence-level RR	RR
Full finetuning	74.06	56.18	0.759	66.37	0.896	73.2	0.988	0.877
Multiple adapters	51.94	51.09	0.984	51.78	0.997	51.92	1	0.994
Single adapter	72.78	54.78	0.753	65.69	0.903	71.53	0.983	0.878
Hyperformer	70.56	54.83	0.777	64.46	0.914	69.75	0.989	0.891
Single compacter	71.47	55.78	0.78	64.64	0.904	70.63	0.988	0.887
Multiple compactors	52.63	52.67	1.001	52.58	0.999	52.69	1.001	1

Adaptation method	Clean	Char-level	Char-level RR	Word-level	Word-level RR	Sentence-level	Sentence-level RR	RR
Full finetuning	66.29	30.26	0.456	51.05	0.77	64.55	0.974	0.725
Multiple adapters	66.15	34.14	0.516	53.89	0.815	64.73	0.979	0.767
Single adapter	66.41	34.38	0.518	53.16	0.8	64.86	0.977	0.759
Hyperformer	65.18	33.79	0.518	52.91	0.812	63.59	0.976	0.765
Single compacter	65.98	34.1	0.517	53.18	0.806	64.4	0.976	0.762
Multiple compactors	65.5	34.39	0.525	52.77	0.806	64.07	0.978	0.764

Table 10: Performance and decrease ratio of Full Finetuning on CLIP-BART against image corruptions given severity 1 to 5.

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	1	64.98	-1.77	-2.652%	53.26	-1.78	-3.235%	72.284	-0.726	-3.235%	108.278	-6.752	-5.870%
gaussian_noise	1	65.73	-1.02	-1.528%	53.983	-1.057	-1.920%	72.872	-0.138	-0.189%	112.591	-2.439	-2.120%
shot_noise	1	65.58	-1.17	-1.753%	54.007	-1.033	-1.877%	72.642	-0.368	-0.503%	111.866	-3.164	-2.751%
speckle_noise	1	65.57	-1.18	-1.768%	53.951	-1.089	-1.978%	72.815	-0.195	-0.268%	113.085	-1.945	-1.691%
zoom_blur	1	59.31	-7.44	-11.146%	50.986	-4.054	-7.366%	57.557	-15.453	-21.166%	85.318	-29.712	-25.830%
defocus_blur	1	65.68	-1.07	-1.603%	54.15	-0.89	-1.617%	73.446	0.436	0.598%	112.459	-2.571	-2.235%
motion_blur	1	65.56	-1.19	-1.783%	54.754	-0.286	-0.519%	73.662	0.652	0.892%	111.378	-3.652	-3.174%
glass_blur	1	65.72	-1.03	-1.543%	54.365	-0.675	-1.227%	72.901	-0.109	-0.150%	112.786	-2.244	-1.951%
gaussian_blur	1	66.33	-0.42	-0.629%	54.476	-0.564	-1.025%	73.618	0.608	0.833%	113.871	-1.159	-1.008%
jpeg_compression	1	66.08	-0.67	-1.004%	54.73	-0.31	-0.562%	73.245	0.235	0.322%	114.068	-0.962	-0.836%
contrast	1	65.12	-1.63	-2.442%	54.397	-0.643	-1.169%	72.915	-0.095	-0.130%	112.188	-2.842	-2.471%
elastic_transform	1	66.34	-0.41	-0.614%	54.548	-0.492	-0.895%	72.456	-0.554	-0.759%	112.114	-2.916	-2.535%
pixelate	1	63.54	-3.21	-4.809%	53.363	-1.677	-3.047%	72.011	-0.999	-1.368%	104.059	-10.971	-9.538%
snow	1	62.2	-4.55	-6.816%	51.67	-3.37	-6.124%	71.193	-1.817	-2.489%	100.746	-14.284	-12.418%
frost	1	63.32	-3.43	-5.139%	51.662	-3.378	-6.138%	71.451	-1.559	-2.135%	102.595	-12.435	-10.810%
fog	1	64.67	-2.08	-3.116%	54.277	-0.763	-1.386%	72.456	-0.554	-0.759%	111.289	-3.741	-3.252%
brightness	1	66.41	-0.34	-0.509%	54.874	-0.166	-0.302%	73.504	0.494	0.676%	114.175	-0.855	-0.743%
spatter	1	66.32	-0.43	-0.644%	55.048	0.008	0.015%	72.987	0.023	0.032%	113.983	-1.047	-0.910%
saturate	1	64.01	-2.74	-4.105%	53.92	-1.12	-2.036%	71.408	-1.602	-2.194%	110.866	-4.164	-3.620%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	2	63.89	-2.86	-4.285%	53.125	-1.915	-3.480%	71.48	-1.53	-2.096%	105.865	-9.165	-7.968%
gaussian_noise	2	64.9	-1.85	-2.772%	53.244	-1.796	-3.264%	72.298	-0.712	-0.975%	109.252	-5.778	-5.023%
shot_noise	2	64.71	-2.04	-3.056%	53.554	-1.486	-2.700%	72.04	-0.97	-1.329%	109.188	-5.842	-5.078%
speckle_noise	2	65.1	-1.65	-2.472%	53.792	-1.248	-2.267%	72.169	-0.841	-1.152%	111.207	-3.823	-3.323%
zoom_blur	2	56.37	-10.38	-15.551%	48.307	-6.733	-12.234%	62.868	-10.142	-13.892%	68.607	-46.423	-40.357%
defocus_blur	2	64.98	-1.77	-2.652%	53.92	-1.12	-2.036%	73.073	0.063	0.086%	110.072	-4.958	-4.310%
motion_blur	2	64.46	-2.29	-3.431%	54.11	-0.93	-1.689%	72.7	-0.31	-0.425%	108.346	-6.594	-5.733%
glass_blur	2	64.51	-2.24	-3.356%	53.403	-1.637	-2.975%	72.513	-0.497	-0.680%	107.491	-7.539	-6.554%
gaussian_blur	2	65.27	-1.48	-2.217%	54.087	-0.953	-1.732%	73.489	0.479	0.656%	111.55	-3.48	-3.025%
jpeg_compression	2	65.91	-0.84	-1.258%	54.11	-0.93	-1.689%	72.757	-0.253	-0.346%	112.967	-2.063	-1.794%
contrast	2	64.49	-2.26	-3.386%	54.158	-0.882	-1.602%	72.642	-0.368	-0.503%	109.976	-5.054	-4.393%
elastic_transform	2	62.83	-3.92	-5.873%	52.186	-2.854	-5.185%	68.954	-4.056	-5.556%	97.789	-17.241	-14.988%
pixelate	2	62.52	-4.23	-6.337%	53.069	-1.971	-3.581%	68.882	-4.128	-5.654%	99.817	-15.213	-13.225%
snow	2	58.97	-7.78	-11.655%	49.11	-5.93	-10.775%	68.207	-4.803	-6.578%	88.639	-26.391	-22.943%
frost	2	59.75	-7.0	-10.487%	49.936	-5.104	-9.273%	69.269	-3.741	-5.123%	90.028	-25.002	-21.736%
fog	2	63.99	-2.76	-4.135%	53.983	-1.057	-1.920%	73.17	-5.693	-7.797%	109.67	-5.36	-4.660%
brightness	2	65.82	-0.93	-1.393%	54.333	-0.707	-1.285%	73.389	0.379	0.519%	112.915	-2.115	-1.838%
spatter	2	62.97	-3.78	-5.663%	52.838	-2.202	-4.009%	72.011	-0.999	-1.368%	103.555	-11.475	-9.976%
saturate	2	60.93	-5.82	-8.719%	52.473	-2.567	-4.665%	69.097	-3.913	-5.359%	105.074	-9.956	-8.655%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	3	63.14	-3.61	-5.408%	52.846	-2.194	-3.986%	70.59	-2.42	-3.315%	104.057	-10.973	-9.539%
gaussian_noise	3	63.11	-3.64	-5.453%	52.902	-2.138	-3.885%	70.934	-2.076	-2.843%	104.522	-10.508	-9.135%
shot_noise	3	63.07	-3.68	-5.513%	53.228	-1.812	-3.292%	71.695	-1.315	-1.801%	104.457	-10.573	-9.192%
speckle_noise	3	63.49	-3.26	-4.884%	52.759	-2.281	-4.145%	70.547	-2.463	-3.374%	105.693	-9.337	-8.117%
zoom_blur	3	53.39	-13.36	-20.015%	46.709	-8.331	-15.137%	59.882	-13.128	-17.981%	54.376	-60.654	-52.729%
defocus_blur	3	62.97	-3.78	-5.663%	52.743	-2.297	-4.174%	71.796	-1.214	-1.663%	102.735	-12.295	-10.688%
motion_blur	3	62.38	-4.37	-6.547%	53.554	-1.486	-2.700%	70.992	-2.018	-2.764%	101.178	-13.852	-12.042%
glass_blur	3	59.33	-7.42	-11.116%	49.618	-5.422	-9.850%	69.341	-3.669	-5.025%	87.475	-27.555	-23.955%
gaussian_blur	3	64.02	-2.73	-4.090%	52.997	-2.043	-3.711%	72.212	-0.798	-1.093%	105.758	-9.272	-8.060%
jpeg_compression	3	65.65	-1.1	-1.648%	54.42	-0.62	-1.126%	72.212	-0.798	-1.093%	111.718	-3.312	-2.880%
contrast	3	63.11	-3.64	-5.453%	53.594	-1.446	-2.628%	70.963	-2.047	-2.804%	105.053	-9.977	-8.673%
elastic_transform	3	64.47	-2.28	-3.416%	53.331	-1.709	-3.105%	72.973	-0.037	-0.051%	107.551	-7.479	-6.502%
pixelate	3	60.0	-6.75	-10.112%	51.479	-3.561	-6.470%	67.145	-5.865	-8.033%	90.077	-24.953	-21.693%
snow	3	56.86	-9.89	-14.816%	48.028	-7.012	-12.739%	66.112	-6.898	-9.448%	80.885	-34.145	-29.684%
frost	3	57.12	-9.63	-14.427%	48.863	-6.177	-11.223%	67.303	-5.707	-7.817%	81.406	-33.624	-29.231%
fog	3	62.98	-3.77	-5.648%	53.697	-1.343	-2.440%	71.279	-1.731	-2.371%	105.58	-9.45	-8.216%
brightness	3	65.2	-1.55	-2.322%	54.102	-0.938	-1.703%	72.312	-0.698	-0.956%	112.42	-2.61	-2.269%
spatter	3	61.54	-5.21	-7.805%	51.304	-3.736	-6.788%	71.265	-1.745	-2.391%	96.361	-18.669	-16.230%
saturate	3	65.68	-1.07	-1.603%	54.174	-0.866	-1.573%	73.518	0.508	0.696%	113.541	-1.489	-1.294%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	4	60.24	-6.51	-9.753%	51.598	-3.442	-6.254%	68.882	-4.128	-5.654%	94.23	-20.8	-18.082%
gaussian_noise	4	60.56	-6.19	-9.273%	51.67	-3.37	-6.124%	69.025	-3.985	-5.458%	96.345	-18.685	-16.243%
shot_noise	4	60.0	-6.75	-10.112%	51.264	-3.776	-6.660%	67.633	-5.377	-7.365%	90.247	-20.783	-18.068%
speckle_noise	4	61.73	-5.02	-7.521%	52.234	-2.806	-5.098%	69.772	-3.238	-4.435%	104.477	-14.553	-12.651%
zoom_blur	4	51.52	-15.23	-22.816%	45.262	-9.778	-17.766%	58.203	-14.807	-20.281%	45.355	-69.675	-60.571%
defocus_blur	4	61.36	-5.39	-8.075%	52.003	-3.037	-5.517%	70.044	-2.966	-4.062%	95.82	-19.21	-16.700%
motion_blur	4	59.67	-7.08	-10.607%	51.153	-3.887	-7.062%	68.078	-4.932	-6.755%	87.182	-27.848	-24.209%
glass_blur	4	57.32	-9.43	-14.127%	48.569	-6.471	-11.757%	68.021	-4.989	-6.834%	78.438	-36.592	-31.811%
gaussian_blur	4	61.79	-4.96	-7.431%	52.25	-2.79	-5.069%	70.26	-2.75	-3.767%	98.415	-16.615	-14.444%
jpeg_compression	4	64.36	-2.39	-3.581%	53.943	-1.097	-1.992%	72.226	-0.784	-1.074%	107.108	-7.922	-6.887%
contrast	4	58.97	-7.78	-11.655%	50.723	-4.317	-7.843%	67.059	-5.951	-8.151%	92.46	-22.57	-19.621%
elastic_transform	4	62.44	-4.31	-6.457%	51.773	-3.267	-5.936%	71.81	-1.2	-1.644%	98.842	-16.188	-14.073%
pixelate	4	55.69	-11.06	-16.569%	48.561	-6.479	-11.771%	62.495	-10.515	-14.403%	74.937	-40.093	-34.855%
snow	4	53.7	-13.05	-19.551%	46.216	-8.824	-16.033%	63.672	-9.338	-12.791%	64.972	-50.058	-43.517%
frost	4	56.41	-10.34	-15.491%	48.76	-6.28	-11.410%	66.973	-6.037	-8.269%	77.764	-37.266	-32.397%
fog	4	61.3	-5.45	-8.165%	52.202	-2.838	-5.156%	69.729	-3.281	-4.494%	99.957	-15.073	-13.103%
brightness	4	64.45	-2.3	-3.446%	53.609	-1.431	-2.599%	71.078	-1.932	-2.646%	109.263	-5.767	-5.014%
spatter	4	59.01	-7.74	-11.596%	50.246	-4.794	-8.709%	68.265	-4.745	-6.500%	85.761	-29.269	-25.445%
saturate	4	62.99	-3.76	-5.633%	52.608	-2.432	-4.419%	70.662	-2.348	-3.216%	107.0	-8.03	-6.981%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	5	56.35	-10.4	-15.58%	49.15	-5.89	-10.70%	66.16	-6.85	-9.38%	81.17	-33.86	-29.444%
gaussian_noise	5	56.25	-10.5	-15.73%	49.03	-6.01	-10.92%	65.81	-7.2	-9.86%	81.35	-33.68	-29.288%
shot_noise	5	57.2	-9.55	-14.31%	49.82	-5.22	-9.48%	65.73	-7.28	-9.97%	85.44	-29.59	-25.72%
speckle_noise	5	59.85	-6.9	-10.34%	51.44	-3.6	-6.54%	67.53	-5.48	-7.51%	94.18	-20.85	-1

Table 11: Performance and decrease ratio of Half-shared Adapters on CLIP-BART against image corruptions given severity 1 to 5.

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	1	62.84	-2.36	-3.620%	51.654	-1.306	-2.467%	69.241	-0.789	-1.127%	109.345	-5.155	-4.502%
gaussian_noise	1	63.97	-1.23	-1.887%	52.6	-0.36	-0.680%	70.217	0.187	0.267%	112.308	-2.192	-1.915%
shot_noise	1	64.04	-1.16	-1.779%	51.701	-1.259	-2.377%	70.26	0.23	0.328%	111.183	-3.317	-2.897%
speckle_noise	1	64.15	-1.05	-1.610%	52.139	-0.821	-1.551%	69.255	-0.775	-1.107%	111.187	-3.313	-2.893%
zoom_blur	1	58.33	-6.87	-10.537%	49.507	-3.453	-6.520%	57.227	-12.803	-18.282%	85.69	-28.81	-25.162%
defocus_blur	1	64.04	-1.16	-1.779%	52.155	-0.805	-1.521%	70.174	0.144	0.205%	110.785	-3.715	-3.245%
motion_blur	1	64.08	-1.12	-1.718%	52.457	-0.503	-0.950%	70.116	0.086	0.123%	110.093	-4.407	-3.849%
glass_blur	1	64.14	-1.06	-1.626%	52.385	-0.575	-1.086%	70.389	0.359	0.513%	111.431	-3.069	-2.680%
gaussian_blur	1	64.9	-0.3	-0.460%	52.95	-0.01	-0.020%	70.274	0.244	0.349%	113.665	-0.835	-0.729%
jpeg_compression	1	64.63	-0.57	-0.874%	52.457	-0.503	-0.950%	70.36	0.33	0.472%	113.127	-1.373	-1.200%
contrast	1	63.76	-1.44	-2.209%	52.027	-0.933	-1.761%	69.901	-0.129	-0.184%	111.495	-3.005	-2.624%
elastic_transform	1	64.43	-0.77	-1.181%	52.274	-0.686	-1.296%	69.8	-0.23	-0.328%	112.4	-2.1	-1.834%
pixelate	1	61.78	-3.42	-5.245%	51.137	-1.823	-3.442%	69.112	-0.918	-1.312%	102.092	-12.408	-10.836%
snow	1	60.28	-4.92	-7.546%	50.477	-2.483	-4.688%	68.265	-1.765	-2.521%	99.536	-14.964	-13.069%
frost	1	61.47	-3.73	-5.721%	50.469	-2.491	-4.703%	68.451	-1.579	-2.254%	103.326	-11.174	-9.759%
fog	1	63.31	-1.89	-2.899%	51.964	-0.996	-1.881%	70.274	0.244	0.349%	111.251	-3.249	-2.837%
brightness	1	64.79	-0.41	-0.629%	52.663	-0.297	-0.560%	70.748	0.718	1.025%	113.052	-1.448	-1.265%
spatter	1	64.51	-0.69	-1.058%	52.552	-0.408	-0.770%	70.317	0.287	0.410%	112.966	-1.534	-1.340%
saturate	1	62.37	-2.83	-4.340%	51.638	-1.322	-2.497%	69.269	-0.761	-1.086%	110.372	-4.128	-3.606%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	2	62.14	-3.06	-4.693%	50.954	-2.006	-3.788%	67.978	-2.052	-2.931%	105.6	-8.9	-7.773%
gaussian_noise	2	63.21	-1.99	-3.052%	51.487	-1.473	-2.782%	69.413	-0.617	-0.881%	109.248	-5.252	-4.586%
shot_noise	2	63.13	-2.07	-3.175%	51.773	-1.187	-2.241%	68.939	-1.091	-1.557%	107.995	-6.505	-5.681%
speckle_noise	2	63.53	-1.67	-2.561%	51.693	-1.267	-2.392%	69.399	-0.631	-0.902%	110.78	-3.72	-3.249%
zoom_blur	2	55.67	-9.53	-14.617%	47.694	-5.266	-9.943%	61.806	-8.224	-11.744%	69.462	-45.038	-39.334%
defocus_blur	2	63.37	-1.83	-2.807%	51.383	-1.577	-2.977%	70.001	-0.029	-0.041%	109.082	-5.418	-4.732%
motion_blur	2	62.96	-2.24	-3.436%	51.582	-1.378	-2.602%	69.872	-0.158	-0.225%	106.891	-7.609	-6.646%
glass_blur	2	63.17	-2.03	-3.113%	51.717	-1.243	-2.347%	69.126	-0.904	-1.291%	107.2	-7.3	-6.376%
gaussian_blur	2	63.88	-1.32	-2.025%	51.852	-1.108	-2.091%	70.231	0.201	0.287%	110.2	-4.3	-3.756%
jpeg_compression	2	64.26	-0.94	-1.442%	52.083	-0.877	-1.656%	69.585	-0.445	-0.635%	112.297	-2.203	-1.924%
contrast	2	63.14	-2.06	-3.160%	51.844	-1.116	-2.106%	69.327	-0.703	-1.004%	109.098	-5.402	-4.718%
elastic_transform	2	61.55	-3.65	-5.598%	50.517	-2.443	-4.613%	67.547	-2.483	-3.546%	97.081	-17.419	-15.213%
pixelate	2	61.27	-3.93	-6.028%	50.731	-2.229	-4.208%	66.284	-3.746	-5.349%	99.594	-14.906	-13.018%
snow	2	57.4	-7.8	-11.963%	47.162	-5.798	-10.948%	66.815	-3.215	-4.591%	88.051	-26.449	-23.099%
frost	2	58.16	-7.04	-10.798%	48.497	-4.463	-8.426%	67.002	-3.028	-4.324%	91.679	-22.821	-19.931%
fog	2	62.61	-2.59	-3.972%	51.415	-1.545	-2.917%	65.638	-4.392	-6.272%	109.042	-5.458	-4.767%
brightness	2	64.2	-1.0	-1.534%	52.003	-0.957	-1.806%	70.274	0.244	0.349%	112.985	-1.515	-1.323%
spatter	2	61.23	-3.97	-6.089%	50.859	-2.101	-3.968%	69.212	-0.818	-1.168%	102.925	-11.575	-10.109%
saturate	2	59.61	-5.59	-8.574%	50.708	-2.252	-4.253%	67.088	-2.942	-4.201%	104.939	-9.561	-8.350%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	3	61.32	-3.88	-5.951%	50.175	-2.785	-5.259%	68.222	-1.808	-2.582%	103.077	-11.423	-9.977%
gaussian_noise	3	61.62	-3.58	-5.491%	50.549	-2.411	-4.553%	68.58	-1.45	-2.070%	105.052	-9.448	-8.251%
shot_noise	3	61.49	-3.71	-5.690%	51.264	-1.696	-3.202%	68.164	-1.866	-2.664%	103.781	-10.719	-9.362%
speckle_noise	3	61.96	-3.24	-4.969%	50.867	-2.093	-3.953%	68.509	-1.521	-2.172%	104.433	-10.067	-8.792%
zoom_blur	3	52.68	-12.52	-19.202%	45.675	-7.285	-13.756%	59.165	-10.865	-15.515%	54.675	-59.825	-52.249%
defocus_blur	3	61.64	-3.56	-5.460%	50.875	-2.085	-3.938%	68.738	-1.292	-1.844%	102.239	-12.261	-10.708%
motion_blur	3	61.2	-4.0	-6.135%	51.153	-1.807	-3.412%	67.978	-2.052	-2.931%	100.62	-13.88	-12.123%
glass_blur	3	57.94	-7.26	-11.135%	47.742	-5.218	-9.853%	67.159	-2.871	-4.099%	87.071	-27.429	-23.956%
gaussian_blur	3	62.33	-2.87	-4.402%	51.423	-1.537	-2.902%	68.652	-1.378	-1.967%	104.626	-9.874	-8.624%
jpeg_compression	3	63.99	-1.21	-1.856%	52.536	-0.424	-0.800%	69.643	-0.387	-0.553%	111.723	-2.777	-2.425%
contrast	3	61.77	-3.43	-5.261%	50.755	-2.205	-4.163%	68.336	-1.694	-2.418%	105.203	-9.297	-8.120%
elastic_transform	3	63.0	-2.2	-3.374%	51.574	-1.386	-2.617%	69.93	-0.1	-0.143%	107.179	-7.321	-6.394%
pixelate	3	58.76	-6.44	-9.877%	49.372	-3.588	-6.775%	65.294	-4.736	-6.763%	90.913	-23.587	-20.600%
snow	3	55.52	-9.68	-14.847%	47.289	-5.671	-10.708%	64.892	-5.138	-7.337%	79.752	-34.748	-30.347%
frost	3	55.43	-9.77	-14.985%	46.772	-6.188	-11.684%	65.222	-4.808	-6.866%	82.156	-32.344	-28.248%
fog	3	61.42	-3.78	-5.798%	51.328	-1.632	-3.082%	68.58	-1.45	-2.070%	105.691	-8.809	-7.694%
brightness	3	63.4	-1.8	-2.761%	51.725	-1.235	-2.332%	69.714	-0.316	-0.451%	111.483	-3.017	-2.635%
spatter	3	59.87	-5.33	-8.175%	49.96	-3.0	-5.664%	68.092	-1.938	-2.767%	96.967	-17.533	-15.313%
saturate	3	64.25	-0.95	-1.457%	51.821	-1.139	-2.151%	70.518	0.488	0.697%	112.453	-2.047	-1.788%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	4	58.84	-6.36	-9.755%	49.396	-3.564	-6.730%	67.303	-2.727	-3.894%	93.77	-20.73	-18.105%
gaussian_noise	4	59.07	-6.13	-9.402%	49.833	-3.127	-5.904%	67.059	-2.971	-4.122%	95.573	-18.927	-16.530%
shot_noise	4	58.48	-6.72	-10.307%	50.04	-2.92	-5.144%	65.896	-4.134	-5.903%	92.981	-21.519	-18.794%
speckle_noise	4	60.43	-4.77	-7.316%	50.684	-2.276	-4.298%	67.317	-2.713	-3.874%	100.508	-13.992	-12.220%
zoom_blur	4	50.72	-14.48	-22.209%	44.538	-8.422	-15.902%	57.571	-12.459	-17.790%	44.394	-70.106	-61.228%
defocus_blur	4	59.77	-5.43	-8.328%	50.151	-2.809	-5.304%	67.246	-2.784	-3.976%	94.926	-19.574	-17.095%
motion_blur	4	58.71	-6.49	-9.954%	49.642	-3.318	-6.265%	66.413	-3.617	-5.165%	87.531	-26.699	-23.553%
glass_blur	4	56.08	-9.12	-13.988%	47.058	-5.902	-11.144%	66.485	-3.545	-5.062%	79.98	-34.52	-30.148%
gaussian_blur	4	60.8	-4.4	-6.748%	50.509	-2.451	-4.628%	67.978	-2.052	-2.931%	97.356	-17.144	-14.973%
jpeg_compression	4	63.05	-2.15	-3.298%	51.169	-1.791	-3.382%	69.47	-0.56	-0.799%	107.974	-6.526	-5.699%
contrast	4	57.65	-7.55	-11.580%	48.704	-4.256	-8.036%	65.423	-4.607	-6.579%	90.713	-23.787	-20.775%
elastic_transform	4	60.82	-4.38	-6.718%	49.587	-3.373	-6.370%	69.47	-0.56	-0.799%	99.136	-15.364	-13.418%
pixelate	4	54.89	-10.31	-15.813%	46.208	-6.752	-12.750%	61.676	-6.354	-11.928%	73.596	-40.904	-35.724%
snow	4	52.57	-12.63	-19.371%	45.095	-7.865	-14.852%	62.81	-7.22	-10.309%	64.88	-49.62	-43.366%
frost	4	54.92	-10.28	-15.767%	46.915	-6.045	-11.414%	65.451	-4.579	-6.538%	78.524	-35.976	-31.420%
fog	4	59.85	-5.35	-8.206%	50.143	-2.817	-5.319%	68.25	-1.78	-2.541%	100.76	-13.74	-12.000%
brightness	4	62.56	-2.64	-4.049%	51.153	-1.807	-3.412%	69.011	-1.019	-1.455%	108.211	-6.289	-5.492%
spatter	4	57.78	-7.42	-11.380%	48.251	-4.709	-8.892%	66.858	-3.172	-4.529%	86.919	-27.581	-24.088%
saturate	4	61.38	-3.82	-5.859%	50.437	-2.523	-4.763%	68.322	-1.708	-2.439%	107.238	-7.262	-6.342%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	5	54.94	-10.26	-15.736%	47.949	-5.011	-9.462%	64.762	-5.268	-7.522%	79.944	-34.556	-30.180%
gaussian_noise	5	54.79	-10.41	-15.966%	47.742	-5.218	-9.853%	64.59	-5.44	-7.768%	79.987	-34.513	-30.143%
shot_noise	5	55.94	-9.26	-14.202%	48.076	-4.884	-9.222%	63.858	-6.172	-8.813%	84.561	-29.939	-26.148%
speckle_noise	5	58.5	-6.7	-10.276%	49.563	-3.997	-6.415%	65.581	-4.449	-6.354%			

Table 12: Performance and decrease ratio of Hyperformer on CLIP-BART against image corruptions given severity 1 to 5.

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	1	63.11	-2.27	-3.472%	51.113	-1.407	-2.679%	70.59	-1.62	-2.244%	108.315	-6.553	-5.705%
gaussian_noise	1	64.11	-1.27	-1.942%	52.218	-0.302	-0.575%	71.236	-0.974	-1.349%	111.564	-3.304	-2.876%
shot_noise	1	64.01	-1.37	-2.095%	51.773	-0.747	-1.422%	71.25	-0.96	-1.329%	111.913	-2.955	-2.573%
speckle_noise	1	64.26	-1.12	-1.713%	51.988	-0.532	-1.014%	71.365	-0.845	-1.170%	111.887	-2.981	-2.596%
zoom_blur	1	58.64	-6.74	-10.309%	49.284	-3.236	-6.161%	56.05	-16.16	-22.379%	86.759	-28.109	-24.470%
defocus_blur	1	64.36	-1.02	-1.560%	52.194	-0.326	-0.620%	71.953	-0.257	-0.355%	111.434	-3.434	-2.989%
motion_blur	1	64.19	-1.19	-1.820%	51.988	-0.532	-1.014%	71.394	-0.816	-1.130%	111.28	-3.588	-3.123%
glass_blur	1	64.29	-1.09	-1.667%	52.29	-0.23	-0.438%	71.867	-0.343	-0.474%	110.75	-4.118	-3.585%
gaussian_blur	1	65.14	-0.24	-0.367%	52.481	-0.039	-0.075%	72.025	-0.185	-0.256%	113.892	-0.976	-0.849%
jpeg_compression	1	64.59	-0.79	-1.208%	52.218	-0.302	-0.575%	72.126	-0.084	-0.117%	113.208	-1.66	-1.445%
contrast	1	64.11	-1.27	-1.942%	52.194	-0.326	-0.620%	71.107	-1.103	-1.528%	111.276	-3.592	-3.127%
elastic_transform	1	64.85	-0.53	-0.811%	52.488	-0.032	-0.060%	70.762	-1.448	-2.005%	111.751	-3.117	-2.713%
pixelate	1	61.97	-3.41	-5.216%	51.153	-1.367	-2.603%	69.872	-2.338	-3.237%	102.682	-12.186	-10.609%
snow	1	60.68	-4.7	-7.189%	50.231	-2.289	-4.359%	69.7	-2.51	-3.476%	99.589	-15.279	-13.302%
frost	1	61.91	-3.47	-5.307%	50.342	-2.178	-4.147%	69.844	-2.366	-3.277%	103.414	-11.454	-9.971%
fog	1	63.7	-1.68	-2.570%	52.186	-0.334	-0.635%	70.963	-1.247	-1.727%	110.747	-4.121	-3.588%
brightness	1	64.96	-0.42	-0.642%	52.322	-0.198	-0.378%	71.681	-0.529	-0.733%	114.6	-0.268	-0.233%
spatter	1	64.8	-0.58	-0.887%	52.25	-0.27	-0.514%	71.509	-0.701	-0.971%	113.441	-4.227	-3.424%
saturate	1	62.41	-2.97	-4.543%	50.644	-1.876	-3.572%	70.604	-1.606	-2.224%	111.07	-3.798	-3.306%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	2	62.56	-2.82	-4.313%	51.264	-1.256	-2.391%	69.858	-2.352	-3.257%	105.447	-9.421	-8.202%
gaussian_noise	2	63.22	-2.16	-3.304%	51.28	-1.24	-2.361%	70.389	-1.821	-2.522%	108.798	-6.07	-5.285%
shot_noise	2	63.2	-2.18	-3.334%	51.534	-0.986	-1.877%	70.791	-1.419	-1.965%	108.495	-6.373	-5.548%
speckle_noise	2	63.8	-1.58	-2.417%	51.375	-1.145	-2.179%	70.619	-1.591	-2.204%	110.85	-4.018	-3.498%
zoom_blur	2	55.69	-9.69	-14.821%	47.496	-5.024	-9.567%	61.389	-10.821	-14.985%	72.303	-42.565	-37.056%
defocus_blur	2	63.91	-1.47	-2.248%	51.868	-0.652	-1.241%	71.064	-1.146	-1.588%	109.619	-5.249	-4.569%
motion_blur	2	63.28	-2.1	-3.212%	51.67	-0.85	-1.619%	71.178	-1.032	-1.429%	107.325	-7.543	-6.566%
glass_blur	2	63.23	-2.15	-3.288%	51.852	-0.668	-1.271%	70.733	-1.477	-2.045%	107.49	-7.378	-6.423%
gaussian_blur	2	64.24	-1.14	-1.744%	51.932	-0.588	-1.120%	71.595	-0.615	-0.852%	110.869	-3.999	-3.482%
jpeg_compression	2	64.52	-0.86	-1.315%	52.17	-0.35	-0.666%	71.796	-0.414	-0.574%	111.366	-3.502	-3.048%
contrast	2	63.36	-2.02	-3.090%	51.821	-0.699	-1.332%	70.518	-1.692	-2.343%	109.591	-5.277	-4.594%
elastic_transform	2	61.92	-3.46	-5.292%	50.716	-1.804	-3.436%	68.049	-4.161	-5.762%	96.699	-18.169	-15.818%
pixelate	2	61.24	-4.14	-6.332%	50.723	-1.797	-3.421%	67.36	-4.85	-6.716%	100.385	-14.483	-12.608%
snow	2	57.78	-7.6	-11.624%	47.535	-4.985	-9.491%	67.145	-5.065	-7.014%	88.787	-26.081	-22.705%
frost	2	58.72	-6.66	-10.187%	48.354	-4.166	-7.932%	68.451	-3.759	-5.205%	90.232	-24.636	-21.447%
fog	2	63.02	-2.36	-3.610%	51.375	-1.145	-2.179%	67.073	-1.537	-2.139%	109.229	-5.639	-4.909%
brightness	2	64.54	-0.84	-1.285%	52.258	-0.262	-0.499%	71.265	-0.945	-1.309%	112.945	-1.923	-1.674%
spatter	2	61.69	-3.69	-5.644%	50.588	-1.932	-3.678%	70.26	-1.95	-2.701%	102.503	-12.365	-10.764%
saturate	2	59.63	-5.75	-8.795%	50.223	-2.297	-4.374%	68.638	-3.572	-4.947%	105.416	-9.452	-8.228%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	3	61.56	-3.82	-5.843%	50.954	-1.566	-2.982%	69.714	-2.496	-3.456%	102.727	-12.141	-10.569%
gaussian_noise	3	62.05	-3.33	-5.093%	51.296	-1.224	-2.331%	69.528	-2.682	-3.714%	103.63	-11.238	-9.783%
shot_noise	3	61.79	-3.59	-5.491%	51.145	-1.375	-2.618%	69.772	-2.438	-3.377%	104.573	-10.295	-8.962%
speckle_noise	3	61.96	-3.42	-5.231%	51.129	-1.391	-2.649%	69.872	-2.338	-3.237%	105.375	-9.493	-8.264%
zoom_blur	3	53.18	-12.2	-18.660%	45.341	-7.179	-13.669%	58.375	-13.835	-19.159%	58.544	-56.324	-49.034%
defocus_blur	3	62.01	-3.37	-5.154%	50.771	-1.749	-3.330%	70.159	-2.051	-2.840%	103.089	-11.779	-10.254%
motion_blur	3	61.69	-3.69	-5.644%	51.002	-1.518	-2.891%	69.025	-3.185	-4.410%	101.688	-13.18	-11.474%
glass_blur	3	57.83	-7.55	-11.548%	47.997	-4.523	-8.613%	67.604	-4.606	-6.378%	86.674	-28.194	-24.545%
gaussian_blur	3	62.8	-2.58	-3.946%	51.232	-1.288	-2.452%	70.174	-2.036	-2.820%	105.091	-9.777	-8.512%
jpeg_compression	3	64.18	-1.2	-1.835%	51.948	-0.572	-1.089%	71.092	-1.118	-1.548%	110.729	-4.139	-3.603%
contrast	3	62.11	-3.27	-5.002%	51.352	-1.168	-2.225%	69.399	-2.811	-3.893%	105.39	-9.478	-8.251%
elastic_transform	3	63.12	-2.26	-3.457%	51.55	-0.97	-1.846%	70.834	-1.376	-1.906%	107.145	-7.723	-6.723%
pixelate	3	59.06	-6.32	-9.667%	49.253	-3.267	-6.221%	66.356	-5.854	-8.107%	91.132	-22.736	-20.664%
snow	3	55.98	-9.4	-14.377%	46.875	-5.645	-10.747%	65.681	-6.529	-9.042%	80.277	-34.591	-30.114%
frost	3	56.45	-8.93	-13.659%	47.392	-5.128	-9.763%	66.915	-5.295	-7.332%	80.946	-33.922	-29.531%
fog	3	61.72	-3.66	-5.598%	50.867	-1.653	-3.148%	69.844	-2.366	-3.277%	106.669	-8.199	-7.138%
brightness	3	63.77	-1.61	-2.463%	52.019	-0.501	-0.953%	70.891	-1.319	-1.826%	111.091	-3.777	-3.288%
spatter	3	60.24	-5.14	-7.862%	49.69	-2.83	-5.389%	68.939	-3.271	-4.529%	96.355	-18.513	-16.117%
saturate	3	64.46	-0.92	-1.407%	52.075	-0.445	-0.847%	71.322	-0.888	-1.230%	112.255	-2.613	-2.275%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	4	59.22	-6.16	-9.422%	50.183	-2.337	-4.450%	67.647	-4.563	-6.318%	93.42	-21.448	-18.672%
gaussian_noise	4	59.46	-5.92	-8.055%	50.08	-2.44	-4.647%	68.753	-3.457	-4.788%	95.94	-18.928	-16.478%
shot_noise	4	58.77	-6.61	-10.110%	49.857	-2.663	-5.071%	67.49	-4.72	-6.537%	94.596	-20.272	-17.648%
speckle_noise	4	60.51	-4.87	-7.449%	50.755	-1.765	-3.360%	68.566	-3.644	-5.046%	100.903	-13.965	-12.157%
zoom_blur	4	51.39	-13.99	-21.398%	44.149	-8.371	-15.940%	56.595	-15.615	-21.624%	47.784	-67.084	-58.401%
defocus_blur	4	60.34	-5.04	-7.709%	49.92	-2.6	-4.950%	69.284	-2.926	-4.052%	95.83	-19.038	-16.574%
motion_blur	4	58.68	-6.7	-10.248%	49.69	-2.83	-5.389%	67.274	-4.936	-6.835%	89.69	-25.178	-21.919%
glass_blur	4	56.26	-9.12	-13.949%	46.931	-5.589	-10.641%	67.246	-4.964	-6.875%	79.559	-35.31	-30.740%
gaussian_blur	4	60.72	-4.66	-7.128%	50.453	-2.067	-3.935%	69.47	-2.74	-3.794%	97.964	-16.904	-14.716%
jpeg_compression	4	63.0	-2.38	-3.640%	50.978	-1.542	-2.936%	70.719	-1.491	-2.065%	106.453	-8.415	-7.326%
contrast	4	58.0	-7.38	-11.288%	49.07	-3.45	-6.569%	66.758	-5.452	-7.551%	92.122	-22.746	-19.802%
elastic_transform	4	61.26	-4.12	-6.302%	50.048	-2.472	-4.707%	70.016	-2.194	-3.039%	99.231	-15.637	-13.613%
pixelate	4	55.17	-10.21	-15.616%	46.796	-5.724	-10.899%	63.356	-8.854	-12.262%	74.516	-40.352	-35.129%
snow	4	52.96	-12.42	-18.997%	45.206	-7.314	-13.926%	63.471	-8.739	-12.103%	64.766	-50.102	-43.617%
frost	4	55.09	-10.29	-15.739%	47.194	-5.326	-10.142%	66.643	-5.567	-7.710%	77.255	-37.613	-32.745%
fog	4	60.07	-5.31	-8.122%	49.793	-2.727	-5.192%	68.796	-3.414	-4.728%	100.214	-14.654	-12.757%
brightness	4	62.87	-2.51	-3.839%	50.906	-1.614	-3.072%	69.556	-2.654	-3.675%	107.822	-7.046	-6.134%
spatter	4	57.89	-7.49	-11.456%	48.267	-4.253	-8.098%	66.915	-5.295	-7.332%	87.218	-27.65	-24.071%
saturate	4	61.49	-3.89	-5.950%	49.928	-2.592	-4.934%	69.298	-2.912	-4.033%	105.786	-9.082	-7.906%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	5	55.42	-9.96	-15.234%	47.806	-4.714	-8.976%	66.04	-6.17	-8.545%	81.486	-33.382	-29.061%
gaussian_noise	5	55.26	-10.12	-15.479%	47.925	-4.595	-8.749%	65.38	-6.83	-9.459%	81.184	-33.684	-29.324%
shot_noise	5	56.2	-9.18	-14.041%	47.694	-4.826	-9.188%	65.509	-6.701	-9.280%	84.695	-30.173	-26.267%
speckle_noise	5	58.93	-6.45	-8.655%	49.428	-3.092	-5.888%	66.915	-5.205	-7.325%</			

Table 13: Performance and decrease ratio of Multiple Adapters on CLIP-BART against image corruptions given severity 1 to 5.

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	1	63.08	-2.22	-3.400%	50.334	-3.056	-5.724%	69.341	-0.069	-0.099%	108.775	-5.695	-4.975%
gaussian_noise	1	63.96	-1.34	-2.052%	50.525	-2.865	-5.367%	69.556	0.146	0.211%	112.055	-2.415	-2.110%
shot_noise	1	64.1	-1.2	-1.838%	50.93	-2.46	-4.607%	69.628	0.218	0.314%	111.893	-2.577	-2.251%
speckle_noise	1	64.28	-1.02	-1.562%	51.018	-2.372	-4.443%	69.556	0.146	0.211%	112.372	-2.098	-1.833%
zoom_blur	1	58.67	-6.63	-10.153%	47.822	-5.568	-10.430%	57.686	-11.724	-16.891%	86.317	-28.153	-24.594%
defocus_blur	1	64.49	-0.81	-1.240%	50.692	-2.698	-5.054%	70.418	1.008	1.452%	110.992	-3.478	-3.038%
motion_blur	1	64.31	-0.99	-1.516%	51.01	-2.38	-4.458%	69.901	0.491	0.707%	110.947	-3.523	-3.078%
glass_blur	1	64.43	-0.87	-1.332%	51.057	-2.333	-4.369%	70.561	1.151	1.659%	112.582	-1.888	-1.649%
gaussian_blur	1	65.1	-0.2	-0.306%	51.169	-2.221	-4.161%	70.217	0.807	1.162%	113.692	-0.778	-0.679%
jpeg_compression	1	64.7	-0.6	-0.919%	51.312	-2.078	-3.892%	69.958	0.548	0.790%	113.934	-0.536	-0.469%
contrast	1	63.91	-1.39	-2.129%	50.167	-3.223	-6.037%	69.657	0.247	0.356%	111.583	-2.887	-2.522%
elastic_transform	1	64.63	-0.67	-1.026%	51.216	-2.174	-4.071%	69.427	0.017	0.025%	112.058	-2.412	-2.107%
pixelate	1	61.72	-3.58	-5.482%	49.412	-3.978	-7.451%	68.466	-0.944	-1.361%	102.565	-11.905	-10.400%
snow	1	60.6	-4.7	-7.198%	48.593	-4.797	-8.985%	68.193	-1.217	-1.753%	100.062	-14.408	-12.587%
frost	1	61.74	-3.56	-5.452%	49.213	-4.177	-7.824%	68.394	-1.016	-1.464%	103.506	-10.964	-9.578%
fog	1	63.34	-1.96	-3.002%	50.596	-2.794	-5.233%	69.241	-0.169	-0.244%	110.445	-4.025	-3.516%
brightness	1	64.83	-0.47	-0.720%	51.177	-2.213	-4.146%	70.848	1.438	2.072%	113.991	-0.479	-0.419%
spatter	1	64.72	-0.58	-0.888%	51.081	-2.309	-4.324%	70.461	1.051	1.514%	113.572	-0.898	-0.785%
saturate	1	62.48	-2.82	-4.319%	50.588	-2.802	-5.248%	68.753	-0.657	-0.947%	110.804	-3.666	-3.203%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	2	62.36	-2.94	-4.502%	49.889	-3.501	-6.558%	68.466	-0.944	-1.361%	106.537	-7.933	-6.930%
gaussian_noise	2	63.33	-1.97	-3.017%	50.183	-3.207	-6.007%	69.054	-0.356	-0.513%	109.084	-5.386	-4.705%
shot_noise	2	63.37	-1.93	-2.956%	50.358	-3.032	-5.679%	68.724	-0.686	-0.988%	109.293	-5.177	-4.523%
speckle_noise	2	63.79	-1.51	-2.312%	50.668	-2.722	-5.099%	68.695	-0.715	-1.030%	110.266	-4.204	-3.673%
zoom_blur	2	55.81	-9.49	-14.533%	45.436	-7.954	-14.897%	61.633	-7.777	-11.204%	70.867	-43.603	-38.091%
defocus_blur	2	63.91	-1.39	-2.129%	50.27	-3.12	-5.843%	69.485	0.075	0.108%	108.924	-5.546	-4.845%
motion_blur	2	63.24	-2.06	-3.155%	50.533	-2.857	-5.352%	69.37	-0.04	-0.058%	108.19	-6.28	-5.487%
glass_blur	2	63.25	-2.05	-3.139%	50.517	-2.873	-5.382%	69.7	0.29	0.418%	107.653	-6.817	-5.955%
gaussian_blur	2	64.24	-1.06	-1.623%	50.429	-2.961	-5.545%	69.915	0.505	0.728%	109.896	-4.574	-3.996%
jpeg_compression	2	64.64	-0.66	-1.011%	51.272	-2.118	-3.967%	69.7	0.29	0.418%	113.017	-1.453	-1.269%
contrast	2	63.0	-2.3	-3.522%	50.024	-3.366	-6.305%	68.781	-0.629	-0.906%	109.711	-4.759	-4.158%
elastic_transform	2	61.58	-3.72	-5.697%	49.229	-4.161	-7.794%	66.327	-3.083	-4.442%	97.907	-16.563	-14.469%
pixelate	2	61.36	-3.94	-6.034%	49.094	-4.296	-8.047%	65.494	-3.916	-5.641%	99.54	-14.93	-13.042%
snow	2	57.58	-7.72	-11.822%	46.152	-7.238	-13.557%	65.71	-3.7	-5.331%	88.051	-26.419	-23.079%
frost	2	58.54	-6.76	-10.352%	47.384	-6.006	-11.249%	66.585	-2.825	-4.070%	91.064	-22.806	-19.923%
fog	2	62.78	-2.52	-3.859%	49.968	-3.422	-6.409%	65.911	-3.499	-5.041%	109.697	-5.373	-4.693%
brightness	2	64.17	-1.13	-1.730%	50.882	-2.508	-4.697%	70.159	0.749	1.080%	113.574	-0.896	-0.782%
spatter	2	61.42	-3.88	-5.942%	49.595	-3.795	-7.109%	68.25	-1.16	-1.671%	104.378	-10.992	-8.816%
saturate	2	59.52	-5.78	-8.851%	49.443	-3.947	-7.392%	67.03	-2.38	-3.428%	104.845	-9.625	-8.408%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	3	61.63	-3.67	-5.620%	49.952	-3.438	-6.439%	68.179	-1.231	-1.774%	103.223	-11.247	-9.825%
gaussian_noise	3	61.83	-3.47	-5.314%	49.436	-3.954	-7.407%	67.848	-1.562	-2.250%	103.956	-10.514	-9.185%
shot_noise	3	61.65	-3.65	-5.590%	49.913	-3.477	-6.513%	68.15	-1.26	-1.816%	105.464	-9.006	-7.868%
speckle_noise	3	62.13	-3.17	-4.855%	49.634	-3.756	-7.034%	67.963	-1.447	-2.084%	104.688	-9.782	-8.545%
zoom_blur	3	53.22	-12.08	-18.499%	43.671	-9.719	-18.203%	59.495	-9.915	-14.285%	57.831	-56.639	-49.479%
defocus_blur	3	62.13	-3.17	-4.855%	49.809	-3.581	-6.707%	68.595	-0.815	-1.174%	102.018	-12.452	-10.878%
motion_blur	3	61.22	-4.08	-6.248%	49.92	-3.47	-6.498%	68.494	-0.916	-1.319%	100.004	-14.466	-12.638%
glass_blur	3	58.46	-6.84	-10.475%	46.923	-6.467	-12.112%	66.915	-2.495	-3.594%	86.333	-28.137	-24.580%
gaussian_blur	3	62.75	-2.55	-3.905%	50.342	-3.048	-5.709%	68.839	-0.571	-0.823%	104.781	-9.689	-8.464%
jpeg_compression	3	63.91	-1.39	-2.129%	51.002	-2.388	-4.473%	69.284	-0.126	-0.182%	110.971	-3.499	-3.057%
contrast	3	61.82	-3.48	-5.329%	49.364	-4.026	-7.541%	67.92	-1.49	-2.146%	105.282	-9.188	-8.027%
elastic_transform	3	63.33	-1.97	-3.017%	50.517	-2.873	-5.382%	69.399	-0.011	-0.016%	107.57	-6.9	-6.028%
pixelate	3	58.99	-6.31	-9.663%	47.448	-5.942	-11.130%	64.518	-4.892	-7.047%	90.252	-24.218	-21.156%
snow	3	55.69	-9.61	-14.717%	45.588	-7.802	-14.614%	64.203	-5.207	-7.502%	80.591	-33.879	-29.597%
frost	3	56.14	-9.16	-14.028%	45.548	-7.842	-14.689%	64.877	-4.533	-6.530%	81.478	-32.992	-28.822%
fog	3	61.56	-3.74	-5.727%	49.277	-4.113	-7.705%	68.695	-0.715	-1.030%	105.695	-8.775	-7.666%
brightness	3	63.57	-1.73	-2.649%	50.557	-2.833	-5.307%	69.614	0.204	0.294%	111.594	-2.876	-2.513%
spatter	3	60.04	-5.26	-8.055%	48.569	-4.821	-9.030%	67.662	-1.748	-2.519%	97.652	-16.818	-14.692%
saturate	3	64.3	-1.0	-1.531%	50.572	-2.818	-5.277%	69.341	-0.069	-0.099%	112.884	-1.586	-1.385%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	4	58.9	-6.4	-9.801%	48.744	-6.646	-8.702%	67.332	-2.078	-2.994%	94.511	-19.959	-17.436%
gaussian_noise	4	59.01	-6.29	-9.632%	48.768	-6.622	-8.658%	67.389	-2.021	-2.912%	95.389	-18.58	-16.231%
shot_noise	4	58.67	-6.63	-10.153%	48.696	-6.694	-8.792%	65.222	-4.188	-6.034%	94.179	-20.291	-17.726%
speckle_noise	4	60.52	-4.78	-7.320%	49.459	-3.931	-7.362%	67.088	-2.322	-3.346%	101.029	-13.441	-11.742%
zoom_blur	4	51.14	-14.16	-21.685%	42.789	-10.601	-19.856%	58.045	-11.365	-16.374%	47.052	-67.418	-58.896%
defocus_blur	4	60.13	-5.17	-7.917%	49.03	-4.36	-8.166%	66.729	-2.681	-3.863%	94.96	-19.51	-17.044%
motion_blur	4	58.83	-6.47	-9.908%	48.346	-5.044	-9.447%	66.183	-3.227	-4.649%	87.903	-26.567	-23.209%
glass_blur	4	56.46	-8.84	-13.538%	45.794	-7.596	-14.227%	66.04	-3.37	-4.855%	80.082	-34.388	-30.041%
gaussian_blur	4	60.74	-4.56	-6.983%	49.459	-3.931	-7.362%	67.676	-1.734	-2.498%	97.068	-17.402	-15.202%
jpeg_compression	4	62.83	-2.47	-3.783%	50.286	-3.104	-5.813%	68.408	-1.002	-1.443%	108.016	-6.454	-5.638%
contrast	4	57.75	-7.55	-11.562%	47.154	-6.236	-11.681%	64.346	-5.064	-7.295%	91.244	-23.226	-20.290%
elastic_transform	4	61.12	-4.18	-6.401%	48.489	-4.901	-9.179%	68.911	-0.499	-0.720%	99.838	-14.632	-12.783%
pixelate	4	55.03	-10.27	-15.727%	44.697	-8.693	-16.282%	61.332	-8.078	-11.638%	74.043	-40.427	-35.317%
snow	4	52.63	-12.67	-19.403%	43.512	-9.878	-18.501%	61.964	-7.446	-10.728%	65.313	-49.157	-42.943%
frost	4	55.3	-10.0	-15.314%	45.842	-7.548	-14.138%	64.963	-4.447	-6.406%	78.01	-36.46	-31.851%
fog	4	59.96	-5.34	-8.178%	48.545	-4.845	-9.075%	68.624	-0.786	-1.133%	100.679	-13.791	-12.048%
brightness	4	62.52	-2.78	-4.257%	50.684	-2.706	-5.069%	68.236	-1.174	-1.691%	108.714	-5.756	-5.028%
spatter	4	58.08	-7.22	-11.057%	46.995	-6.395	-11.978%	66.011	-3.399	-4.897%	86.949	-27.521	-24.042%
saturate	4	61.53	-3.77	-5.773%	49.245	-4.145	-7.764%	68.394	-1.016	-1.464%	106.722	-7.748	-6.769%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	5	55.27	-10.03	-15.360%	46.557	-6.833	-12.797%	64.504	-4.906	-7.068%	80.382	-34.088	-29.779%
gaussian_noise	5	55.26	-10.04	-15.375%	46.279	-7.111	-13.319%	63.801	-5.609	-8.081%	80.15	-34.32	-29.982%
shot_noise	5	56.1	-9.2	-14.089%	46.796	-6.594	-12.551%	64.174	-5.236	-7.544%	83.148	-31.322	-27.362%
speckle_noise	5	58.68	-6.62	-10.138%	48.315	-5.075	-9.506%	64.					



Table 14: Performance and decrease ratio of Multiple Compacters on CLIP-BART against image corruptions given severity 1 to 5.

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	1	62.91	-2.0	-3.081%	51.542	-1.208	-2.289%	69.6	0.15	0.215%	109.258	-5.902	-5.125%
gaussian_noise	1	63.8	-1.11	-1.710%	51.86	-0.89	-1.686%	70.159	0.709	1.021%	111.25	-3.91	-3.395%
shot_noise	1	63.79	-1.12	-1.725%	51.654	-1.096	-2.078%	69.757	0.307	0.443%	112.222	-2.938	-2.552%
speckle_noise	1	63.84	-1.07	-1.648%	51.709	-1.041	-1.973%	69.671	0.221	0.319%	112.337	-2.723	-2.364%
zoom_blur	1	58.08	-6.83	-10.522%	48.736	-4.014	-7.610%	55.404	-14.046	-20.225%	87.068	-28.092	-24.394%
defocus_blur	1	64.05	-0.86	-1.325%	51.876	-0.874	-1.656%	69.7	0.25	0.360%	112.029	-3.131	-2.719%
motion_blur	1	63.68	-1.23	-1.895%	51.685	-1.065	-2.018%	69.772	0.322	0.463%	110.889	-4.271	-3.709%
glass_blur	1	64.13	-0.78	-1.202%	51.972	-0.778	-1.475%	70.202	0.752	1.083%	111.888	-3.272	-2.841%
gaussian_blur	1	64.83	-0.08	-0.123%	52.051	-0.699	-1.325%	70.059	0.609	0.877%	114.375	-0.785	-0.681%
jpeg_compression	1	64.31	-0.6	-0.924%	51.797	-0.953	-1.807%	69.729	0.279	0.401%	114.174	-0.986	-0.856%
contrast	1	63.55	-1.36	-2.095%	51.503	-1.247	-2.365%	68.896	-0.554	-0.797%	112.673	-2.487	-2.160%
elastic_transform	1	64.33	-0.58	-0.894%	52.433	-0.317	-0.601%	69.399	-0.051	-0.074%	111.789	-3.371	-2.927%
pixelate	1	61.63	-3.28	-5.053%	50.676	-2.074	-3.932%	67.935	-1.515	-2.182%	102.462	-12.698	-11.027%
snow	1	60.21	-4.7	-7.241%	49.34	-3.41	-6.464%	68.222	-1.228	-1.769%	100.004	-15.156	-13.161%
frost	1	61.5	-3.41	-5.253%	50.509	-2.241	-4.249%	67.748	-1.702	-2.451%	103.147	-12.013	-10.431%
fog	1	63.22	-1.69	-2.604%	51.344	-1.406	-2.666%	68.494	-0.956	-1.376%	111.403	-3.757	-3.262%
brightness	1	64.59	-0.32	-0.493%	52.035	-0.715	-1.355%	69.93	0.48	0.691%	114.331	-0.829	-0.720%
spatter	1	64.3	-0.61	-0.940%	52.147	-0.603	-1.144%	69.485	0.035	0.050%	113.694	-1.466	-1.273%
saturate	1	62.44	-2.47	-3.805%	50.827	-1.923	-3.646%	68.423	-1.027	-1.479%	110.806	-4.354	-3.781%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	2	62.05	-2.86	-4.406%	50.882	-1.868	-3.540%	68.71	-0.74	-1.066%	105.632	-9.528	-8.274%
gaussian_noise	2	63.11	-1.8	-2.773%	51.344	-1.406	-2.666%	69.198	-0.252	-0.363%	108.818	-6.342	-5.507%
shot_noise	2	63.08	-1.83	-2.819%	50.938	-1.812	-3.435%	68.624	-0.826	-1.190%	108.746	-6.414	-5.570%
speckle_noise	2	63.24	-1.67	-2.573%	51.463	-1.287	-2.440%	68.939	-0.511	-0.735%	110.473	-4.687	-4.070%
zoom_blur	2	55.66	-9.25	-14.251%	46.931	-5.819	-11.031%	59.854	-9.596	-13.818%	73.436	-41.724	-36.231%
defocus_blur	2	63.36	-1.55	-2.388%	51.542	-1.208	-2.289%	69.341	-0.109	-0.157%	109.045	-6.115	-5.310%
motion_blur	2	63.14	-1.77	-2.727%	51.073	-1.677	-3.179%	69.513	0.063	0.091%	108.323	-6.837	-5.937%
glass_blur	2	62.89	-2.02	-3.112%	50.906	-1.844	-3.495%	68.882	-0.568	-0.818%	107.979	-7.181	-6.236%
gaussian_blur	2	63.73	-1.18	-1.818%	51.67	-1.08	-2.048%	69.155	-0.295	-0.425%	110.774	-4.386	-3.808%
jpeg_compression	2	64.34	-0.57	-0.878%	51.503	-1.247	-2.365%	69.542	0.092	0.133%	113.05	-2.11	-1.832%
contrast	2	62.79	-2.12	-3.266%	51.026	-1.724	-3.269%	68.451	-0.999	-1.438%	111.137	-4.023	-3.494%
elastic_transform	2	61.17	-3.74	-5.762%	49.746	-3.004	-5.696%	66.241	-3.209	-4.621%	97.739	-17.421	-15.128%
pixelate	2	60.86	-4.05	-6.239%	50.318	-2.432	-4.610%	65.509	-3.941	-5.675%	99.701	-15.459	-13.424%
snow	2	57.45	-7.46	-11.493%	47.146	-5.604	-10.624%	65.782	-3.668	-5.282%	87.876	-27.284	-23.692%
frost	2	58.22	-6.69	-10.307%	47.798	-4.952	-9.388%	66.743	-2.707	-3.897%	91.162	-23.998	-20.839%
fog	2	62.46	-2.45	-3.774%	50.922	-1.828	-3.465%	65.035	-4.415	-6.357%	109.813	-5.347	-4.643%
brightness	2	64.21	-0.7	-1.078%	52.035	-0.715	-1.355%	69.671	0.221	0.319%	113.438	-1.722	-1.495%
spatter	2	61.25	-3.66	-5.639%	50.541	-2.209	-4.188%	68.064	-1.386	-1.996%	104.301	-10.859	-9.429%
saturate	2	59.45	-5.46	-8.412%	49.992	-2.758	-5.228%	65.896	-3.554	-5.117%	106.233	-8.927	-7.751%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	3	61.12	-3.79	-5.839%	50.207	-2.543	-4.821%	67.389	-2.061	-2.967%	103.652	-11.508	-9.993%
gaussian_noise	3	61.59	-3.32	-5.115%	50.254	-2.496	-4.731%	68.695	-0.755	-1.087%	104.253	-10.907	-9.472%
shot_noise	3	61.64	-3.27	-5.038%	50.692	-2.058	-3.902%	67.719	-1.731	-2.492%	103.954	-11.206	-9.731%
speckle_noise	3	61.89	-3.02	-4.653%	50.167	-2.583	-4.897%	67.145	-2.305	-3.319%	104.78	-10.38	-9.014%
zoom_blur	3	52.63	-12.28	-18.919%	45.23	-7.52	-14.256%	57.457	-11.993	-17.269%	60.191	-54.969	-47.733%
defocus_blur	3	61.62	-3.29	-5.069%	50.564	-2.186	-4.143%	67.49	-1.96	-2.823%	102.858	-12.302	-10.682%
motion_blur	3	61.19	-3.72	-5.731%	50.596	-2.154	-4.083%	67.92	-1.53	-2.203%	101.264	-13.896	-12.067%
glass_blur	3	58.09	-6.82	-10.507%	47.05	-5.7	-10.805%	66.155	-3.295	-4.745%	87.811	-27.349	-23.749%
gaussian_blur	3	62.08	-2.63	-4.052%	50.978	-1.772	-3.359%	67.877	-1.573	-2.265%	105.382	-7.788	-6.849%
jpeg_compression	3	63.83	-1.08	-1.664%	51.383	-1.367	-2.591%	69.269	-0.181	-0.260%	112.577	-2.583	-2.243%
contrast	3	61.62	-3.29	-5.069%	50.485	-2.265	-4.294%	67.518	-1.932	-2.781%	106.32	-8.84	-7.676%
elastic_transform	3	62.83	-2.08	-3.204%	51.073	-1.677	-3.179%	69.47	0.02	0.029%	108.308	-6.852	-5.950%
pixelate	3	58.75	-6.16	-9.490%	48.744	-4.006	-7.595%	64.762	-4.688	-6.750%	89.903	-25.257	-21.932%
snow	3	55.63	-9.28	-14.297%	46.732	-6.018	-11.408%	63.758	-5.692	-8.196%	80.18	-34.98	-30.375%
frost	3	55.94	-8.97	-13.819%	46.43	-6.32	-11.981%	64.849	-4.601	-6.626%	81.889	-33.271	-28.891%
fog	3	61.47	-3.44	-5.300%	50.429	-2.321	-4.399%	67.992	-1.458	-2.099%	106.65	-8.51	-7.390%
brightness	3	63.41	-1.5	-2.311%	51.073	-1.677	-3.179%	68.796	-0.654	-0.942%	111.513	-3.647	-3.167%
spatter	3	59.66	-5.25	-8.088%	49.197	-3.553	-6.736%	67.475	-1.975	-2.843%	97.537	-17.623	-15.303%
saturate	3	63.93	-0.98	-1.510%	51.868	-0.882	-1.671%	69.327	-0.123	-0.177%	112.763	-2.397	-2.081%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	4	58.74	-6.17	-9.505%	49.372	-3.378	-6.404%	66.657	-2.793	-4.021%	93.189	-21.971	-19.079%
gaussian_noise	4	59.07	-5.84	-8.997%	50.278	-2.472	-4.686%	67.045	-2.405	-3.463%	95.92	-19.24	-16.707%
shot_noise	4	58.38	-6.53	-10.060%	49.451	-3.299	-6.253%	66.298	-3.152	-4.538%	94.85	-20.31	-17.636%
speckle_noise	4	60.22	-4.69	-7.225%	49.992	-2.758	-5.228%	66.571	-2.879	-4.145%	101.109	-14.051	-12.201%
zoom_blur	4	50.81	-14.1	-21.722%	44.3	-8.45	-16.020%	55.548	-13.902	-20.018%	50.552	-64.608	-56.103%
defocus_blur	4	59.83	-5.08	-7.826%	49.682	-3.068	-5.816%	66.298	-3.152	-4.538%	95.238	-19.922	-17.300%
motion_blur	4	58.57	-6.34	-9.767%	48.609	-4.141	-7.851%	65.624	-3.826	-5.509%	88.685	-26.475	-22.990%
glass_blur	4	56.46	-8.45	-13.018%	46.192	-6.558	-12.433%	64.791	-4.659	-6.708%	79.143	-36.017	-31.276%
gaussian_blur	4	60.42	-4.49	-6.917%	50.286	-2.464	-4.671%	67.059	-2.391	-3.443%	98.009	-17.151	-14.893%
jpeg_compression	4	62.67	-2.24	-3.451%	50.684	-2.066	-3.917%	68.652	-0.798	-1.149%	108.396	-6.764	-5.873%
contrast	4	58.04	-6.87	-10.584%	47.965	-4.785	-9.072%	64.92	-4.53	-6.522%	92.385	-22.775	-19.777%
elastic_transform	4	61.07	-3.84	-5.916%	49.308	-3.442	-6.525%	68.164	-1.851	-2.595%	99.588	-15.572	-13.522%
pixelate	4	54.99	-9.92	-15.283%	45.969	-6.781	-12.855%	60.471	-8.979	-12.929%	73.948	-41.212	-35.786%
snow	4	52.96	-11.95	-18.410%	44.936	-7.814	-14.814%	61.605	-7.845	-11.296%	65.835	-49.325	-42.832%
frost	4	55.0	-9.91	-15.267%	46.542	-6.208	-11.770%	64.906	-4.544	-6.543%	76.957	-38.203	-33.174%
fog	4	59.78	-5.13	-7.903%	49.451	-3.299	-6.253%	67.647	-1.803	-2.595%	101.781	-13.379	-11.618%
brightness	4	62.56	-2.35	-3.620%	50.421	-2.329	-4.414%	68.107	-1.343	-1.934%	109.146	-6.014	-5.222%
spatter	4	57.58	-7.33	-11.293%	48.195	-4.555	-8.635%	65.294	-4.156	-5.985%	85.615	-29.545	-25.656%
saturate	4	61.16	-3.75	-5.777%	49.666	-3.084	-5.846%	67.834	-1.616	-2.327%	106.231	-8.929	-7.754%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	5	54.97	-9.94	-15.314%	47.527	-5.223	-9.901%	63.873	-5.577	-8.031%	80.384	-34.776	-30.198%
gaussian_noise	5	55.18	-9.73	-14.990%	47.098	-5.652	-10.714%	64.49	-4.96	-7.142%	81.337	-33.823	-29.370%
shot_noise	5	55.66	-9.25	-14.251%	47.146	-5.604	-10.624%	63.959	-5.491	-7.907%	84.001	-31.159	-27.057%
speckle_noise	5	58.45	-6.46	-9.952%	48.895	-3.855	-7.208%	65.451	-				

Table 15: Performance and decrease ratio of Multiple LoRA on CLIP-BART against image corruptions given severity 1 to 5.

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	1	63.12	-2.32	-3.545%	51.662	-0.388	-0.746%	50.337	-0.983	-1.915%	109.536	-5.871	-5.087%
gaussian_noise	1	64.13	-1.31	-2.002%	52.011	-0.039	-0.074%	50.825	-0.495	-0.964%	112.679	-2.728	-2.363%
shot_noise	1	64.1	-1.34	-2.048%	51.701	-0.349	-0.670%	50.466	-0.854	-1.663%	112.511	-2.896	-2.510%
speckle_noise	1	64.18	-1.26	-1.925%	51.868	-0.182	-0.349%	50.682	-0.638	-1.244%	112.6	-2.807	-2.432%
zoom_blur	1	58.12	-7.32	-11.186%	48.958	-3.092	-5.939%	50.251	-1.069	-2.083%	86.91	-28.497	-24.693%
defocus_blur	1	64.35	-1.09	-1.666%	51.98	-0.07	-0.135%	50.911	-0.409	-0.796%	112.669	-2.738	-2.373%
motion_blur	1	64.09	-1.35	-2.063%	51.646	-0.404	-0.777%	51.816	0.496	0.966%	109.514	-5.893	-5.106%
glass_blur	1	64.13	-1.31	-2.002%	51.996	-0.054	-0.105%	51.055	-0.265	-0.516%	111.24	-4.167	-3.610%
gaussian_blur	1	65.0	-0.44	-0.672%	51.884	-0.166	-0.318%	51.73	0.41	0.798%	114.48	-0.927	-0.803%
jpeg_compression	1	64.89	-0.55	-0.840%	51.829	-0.221	-0.425%	50.825	-0.495	-0.964%	113.78	-1.627	-1.410%
contrast	1	63.63	-1.81	-2.766%	52.147	0.097	0.186%	51.184	-0.136	-0.265%	112.217	-3.19	-2.764%
elastic_transform	1	64.63	-0.81	-1.238%	52.123	0.073	0.140%	50.825	-0.495	-0.964%	112.606	-2.801	-2.427%
pixelate	1	61.31	-4.13	-6.311%	50.62	-1.43	-2.747%	50.868	-0.452	-0.880%	103.256	-12.151	-10.529%
snow	1	60.23	-5.21	-7.961%	49.467	-2.583	-4.962%	51.012	-0.308	-0.600%	101.293	-14.114	-12.230%
frost	1	61.65	-3.79	-5.792%	50.453	-1.597	-3.068%	50.466	-0.854	-1.663%	103.413	-11.994	-10.393%
fog	1	63.41	-2.03	-3.102%	51.932	-0.118	-0.227%	51.069	-0.251	-0.488%	111.682	-3.725	-3.228%
brightness	1	65.16	-0.28	-0.428%	51.956	-0.094	-0.181%	51.471	0.151	0.295%	114.623	-0.784	-0.679%
spatter	1	64.6	-0.84	-1.284%	52.107	0.057	0.109%	51.457	0.137	0.267%	113.683	-1.724	-1.494%
saturate	1	62.62	-2.82	-4.309%	50.843	-1.207	-2.319%	51.687	0.367	0.714%	111.041	-4.366	-3.783%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	2	62.37	-3.07	-4.691%	51.065	-0.985	-1.892%	50.825	-0.495	-0.964%	107.512	-7.895	-6.841%
gaussian_noise	2	63.44	-2.0	-3.056%	50.986	-1.064	-2.044%	50.524	-0.796	-1.551%	110.583	-4.824	-4.180%
shot_noise	2	63.01	-2.43	-3.713%	51.081	-0.969	-1.861%	50.28	-1.04	-2.027%	109.63	-5.777	-5.006%
speckle_noise	2	63.76	-1.68	-2.567%	51.526	-0.524	-1.006%	50.825	-0.495	-0.964%	110.645	-4.762	-4.126%
zoom_blur	2	55.11	-10.33	-15.785%	47.591	-4.459	-8.567%	50.309	-1.011	-1.971%	71.368	-44.039	-38.160%
defocus_blur	2	63.52	-1.92	-2.934%	51.479	-0.571	-1.097%	51.27	-0.05	-0.097%	109.676	-5.731	-4.966%
motion_blur	2	63.03	-2.41	-3.683%	51.685	-0.365	-0.700%	50.682	-0.638	-1.244%	107.564	-7.843	-6.796%
glass_blur	2	62.88	-2.56	-3.912%	51.288	-0.762	-1.464%	50.696	-0.624	-1.216%	108.29	-7.117	-6.167%
gaussian_blur	2	63.93	-1.51	-2.307%	51.924	-0.126	-0.242%	51.17	-0.15	-0.293%	111.553	-3.854	-3.339%
jpeg_compression	2	64.62	-0.82	-1.253%	51.765	-0.285	-0.548%	50.825	-0.495	-0.964%	113.349	-2.058	-1.783%
contrast	2	63.1	-2.34	-3.576%	51.463	-0.587	-1.128%	51.27	-0.05	-0.097%	109.559	-5.848	-5.067%
elastic_transform	2	61.44	-4.0	-6.112%	50.501	-1.549	-2.976%	50.438	-0.882	-1.719%	98.119	-17.288	-14.980%
pixelate	2	60.91	-4.53	-6.922%	50.747	-1.303	-2.503%	50.495	-0.825	-1.607%	100.503	-14.904	-12.914%
snow	2	57.53	-7.91	-12.087%	47.567	-4.483	-8.613%	50.122	-1.198	-2.334%	89.818	-25.589	-22.173%
frost	2	57.92	-7.52	-11.491%	48.799	-3.251	-6.245%	49.864	-1.456	-2.838%	91.825	-23.582	-20.434%
fog	2	62.57	-2.87	-4.386%	51.805	-0.245	-0.471%	50.438	-0.882	-1.719%	110.05	-5.357	-4.642%
brightness	2	64.31	-1.13	-1.727%	51.733	-0.317	-0.609%	51.213	-0.107	-0.209%	114.086	-1.321	-1.144%
spatter	2	61.08	-4.36	-6.663%	50.676	-1.374	-2.640%	51.227	-0.093	-0.181%	105.197	-10.21	-8.847%
saturate	2	59.48	-5.96	-9.108%	49.928	-2.122	-4.076%	50.797	-0.523	-1.020%	105.874	-9.533	-8.260%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	3	61.46	-3.98	-6.082%	50.652	-1.398	-2.686%	50.093	-1.227	-2.390%	104.261	-11.146	-9.658%
gaussian_noise	3	61.81	-3.63	-5.547%	50.533	-1.517	-2.915%	50.983	-0.337	-0.656%	105.488	-9.919	-8.594%
shot_noise	3	61.63	-3.81	-5.822%	50.286	-1.764	-3.389%	50.538	-0.782	-1.523%	105.624	-9.783	-8.477%
speckle_noise	3	61.7	-3.74	-5.715%	50.708	-1.342	-2.579%	50.194	-1.126	-2.195%	105.934	-9.473	-8.208%
zoom_blur	3	52.57	-12.87	-19.667%	46.247	-5.803	-11.148%	49.993	-1.327	-2.586%	57.065	-58.342	-50.553%
defocus_blur	3	61.82	-3.62	-5.532%	50.739	-1.311	-2.518%	50.538	-0.782	-1.523%	102.845	-12.562	-10.885%
motion_blur	3	61.12	-4.32	-6.601%	50.962	-1.088	-2.090%	50.266	-1.054	-2.055%	101.771	-13.636	-11.816%
glass_blur	3	58.06	-7.38	-11.278%	48.561	-3.489	-6.703%	50.323	-0.997	-1.943%	87.648	-27.759	-24.053%
gaussian_blur	3	62.43	-3.01	-4.600%	50.835	-1.215	-2.335%	50.725	-0.595	-1.160%	105.609	-9.798	-8.490%
jpeg_compression	3	63.92	-1.52	-2.323%	51.638	-0.412	-0.792%	50.667	-0.653	-1.272%	112.413	-2.994	-2.594%
contrast	3	61.78	-3.66	-5.593%	50.517	-1.533	-2.946%	50.208	-1.112	-2.167%	105.746	-9.661	-8.371%
elastic_transform	3	63.18	-2.26	-3.454%	51.701	-0.349	-0.670%	50.868	-0.452	-0.880%	107.495	-7.912	-6.855%
pixelate	3	58.85	-6.59	-10.070%	48.784	-3.266	-6.276%	50.696	-0.624	-1.216%	90.566	-24.841	-21.524%
snow	3	55.67	-9.77	-14.930%	47.233	-4.817	-9.254%	50.71	-0.61	-1.188%	81.606	-33.801	-29.289%
frost	3	55.75	-9.69	-14.807%	47.106	-4.944	-9.498%	50.94	-0.38	-0.740%	82.465	-32.942	-28.544%
fog	3	61.33	-4.11	-6.281%	51.28	-0.77	-1.479%	50.969	-0.351	-0.684%	106.73	-8.677	-7.518%
brightness	3	63.5	-1.94	-2.965%	51.606	-0.444	-0.853%	50.624	-0.696	-1.355%	111.08	-4.327	-3.749%
spatter	3	59.41	-6.03	-9.215%	49.555	-2.495	-4.994%	50.524	-0.796	-1.551%	98.194	-17.213	-14.915%
saturate	3	64.37	-1.07	-1.635%	51.566	-0.484	-0.929%	51.342	0.022	0.043%	113.511	-1.896	-1.643%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	4	58.99	-6.45	-9.856%	49.825	-2.225	-4.275%	49.519	-1.801	-3.509%	95.12	-20.287	-17.579%
gaussian_noise	4	59.3	-6.14	-9.383%	49.269	-2.781	-5.344%	49.663	-1.657	-3.229%	96.011	-18.496	-16.027%
shot_noise	4	58.57	-6.87	-10.498%	49.738	-2.312	-4.443%	49.677	-1.643	-3.201%	95.136	-20.271	-17.565%
speckle_noise	4	60.4	-5.04	-7.702%	49.849	-2.201	-4.229%	49.792	-1.528	-2.978%	102.055	-13.352	-11.569%
zoom_blur	4	50.6	-14.84	-22.677%	44.975	-7.075	-13.592%	50.538	-0.782	-1.523%	47.061	-68.346	-59.222%
defocus_blur	4	60.02	-5.42	-8.282%	50.246	-1.804	-3.465%	49.534	-1.786	-3.481%	95.916	-19.491	-16.889%
motion_blur	4	58.55	-6.89	-10.529%	49.602	-2.448	-4.702%	49.734	-1.586	-3.090%	89.346	-26.061	-22.582%
glass_blur	4	56.15	-9.29	-14.196%	46.939	-5.111	-9.819%	49.677	-1.643	-3.201%	80.448	-34.959	-30.292%
gaussian_blur	4	60.7	-4.74	-7.243%	50.398	-1.652	-3.175%	49.72	-1.6	-3.117%	98.408	-16.999	-14.730%
jpeg_compression	4	62.77	-2.67	-4.080%	51.105	-0.945	-1.815%	50.696	-0.624	-1.216%	107.297	-8.11	-7.027%
contrast	4	57.84	-7.6	-11.614%	49.221	-2.829	-5.435%	49.72	-1.6	-3.117%	92.806	-22.601	-19.584%
elastic_transform	4	60.89	-4.55	-6.953%	50.072	-1.978	-3.801%	50.323	-0.997	-1.943%	99.063	-16.344	-14.162%
pixelate	4	54.64	-10.8	-16.504%	46.971	-5.079	-9.758%	49.806	-1.514	-2.950%	73.645	-41.762	-36.187%
snow	4	52.46	-12.98	-19.835%	45.126	-6.924	-13.302%	49.132	-2.188	-4.264%	65.607	-49.8	-43.151%
frost	4	55.16	-10.28	-15.709%	47.249	-4.801	-9.224%	50.352	-0.968	-1.887%	79.326	-36.081	-31.264%
fog	4	60.03	-5.41	-8.267%	50.429	-1.621	-3.114%	50.38	-0.94	-1.831%	101.394	-14.013	-12.142%
brightness	4	62.7	-2.74	-4.187%	51.312	-0.738	-1.418%	50.409	-0.911	-1.775%	109.221	-6.186	-5.360%
spatter	4	57.6	-7.84	-11.980%	48.251	-3.799	-7.299%	50.897	-0.423	-0.824%	87.559	-27.848	-24.130%
saturate	4	61.37	-4.07	-6.219%	49.698	-2.352	-4.519%	50.954	-0.366	-0.712%	107.309	-8.898	-7.016%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	5	55.13	-10.31	-15.755%	48.052	-3.998	-7.681%	49.849	-1.471	-2.866%	80.405	-35.002	-30.329%
gaussian_noise	5	55.16	-10.28	-15.709%	47.837	-4.213	-8.093%	49.892	-1.428	-2.782%	80.375	-35.032	-30.355%
shot_noise	5	55.92	-9.52	-14.548%	47.655	-4.395	-8.445%	49.548	-1.772	-3.453%	84.802	-30.605	-26.520%
speckle_noise	5	58.31	-7.13	-10.895%	49.253	-2.797	-5.374%	49.361	-1.959	-3			

Table 16: Performance and decrease ratio of Multiple Prompts on CLIP-BART against image corruptions given severity 1 to 5.

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	1	46.27	-0.54	-1.154%	33.519	-0.491	-1.444%	49.892	0.022	0.045%	102.255	-6.364	-5.859%
gaussian_noise	1	46.4	-0.41	-0.876%	33.567	-0.443	-1.304%	49.763	-0.107	-0.214%	105.318	-3.301	-3.039%
shot_noise	1	46.33	-0.48	-1.025%	33.455	-0.555	-1.631%	49.706	-0.164	-0.329%	105.515	-3.104	-2.857%
speckle_noise	1	46.34	-0.47	-1.004%	33.63	-0.38	-1.117%	49.347	-0.523	-1.049%	105.513	-3.106	-2.859%
zoom_blur	1	44.04	-2.77	-5.918%	32.104	-1.906	-5.605%	50.122	0.252	0.505%	81.915	-26.704	-24.585%
defocus_blur	1	46.61	-0.2	-0.427%	34.147	0.137	0.403%	49.749	-0.121	-0.243%	105.641	-2.978	-2.742%
motion_blur	1	46.49	-0.32	-0.684%	33.861	-0.149	-0.439%	50.079	0.209	0.419%	104.123	-4.496	-4.139%
glass_blur	1	46.57	-0.24	-0.513%	33.686	-0.324	-0.953%	49.419	-0.451	-0.905%	105.202	-3.417	-3.146%
gaussian_blur	1	46.71	-0.1	-0.214%	34.282	0.272	0.800%	49.577	-0.293	-0.588%	107.209	-1.41	-1.298%
jpeg_compression	1	46.53	-0.28	-0.598%	33.574	-0.436	-1.281%	50.093	0.223	0.448%	106.695	-1.924	-1.771%
contrast	1	45.93	-0.88	-1.880%	34.075	0.065	0.192%	49.72	-0.15	-0.301%	104.794	-3.825	-3.521%
elastic_transform	1	46.49	-0.32	-0.684%	33.829	-0.181	-0.532%	49.849	-0.021	-0.042%	105.12	-3.499	-3.222%
pixelate	1	45.05	-1.76	-3.760%	33.352	-0.658	-1.935%	49.605	-0.265	-0.531%	95.593	-13.026	-11.992%
snow	1	44.31	-2.5	-5.341%	32.024	-1.986	-5.839%	49.002	-0.868	-1.740%	92.626	-15.993	-14.724%
frost	1	45.09	-1.72	-3.674%	33.066	-0.944	-2.777%	49.519	-0.351	-0.704%	97.127	-11.492	-10.580%
fog	1	45.58	-1.23	-2.628%	33.654	-0.356	-1.047%	49.72	-0.15	-0.301%	105.238	-3.381	-3.113%
brightness	1	46.71	-0.1	-0.214%	33.916	-0.094	-0.275%	49.778	-0.092	-0.185%	107.028	-1.591	-1.465%
spatter	1	46.48	-0.33	-0.705%	33.948	-0.062	-0.182%	49.691	-0.179	-0.358%	106.63	-1.989	-1.831%
saturate	1	45.19	-1.62	-3.461%	33.885	-0.125	-0.369%	49.835	-0.035	-0.070%	104.711	-3.908	-3.598%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	2	45.95	-0.86	-1.837%	33.384	-0.626	-1.842%	50.136	0.266	0.534%	98.724	-9.895	-9.110%
gaussian_noise	2	46.04	-0.77	-1.645%	33.272	-0.738	-2.169%	49.519	-0.351	-0.704%	103.07	-5.549	-5.109%
shot_noise	2	46.07	-0.74	-1.581%	33.797	-0.213	-0.626%	49.447	-0.423	-0.847%	101.997	-6.622	-6.097%
speckle_noise	2	46.05	-0.76	-1.624%	33.447	-0.563	-1.655%	50.222	0.352	0.707%	103.729	-4.89	-4.502%
zoom_blur	2	42.48	-4.33	-9.250%	31.428	-2.582	-7.592%	50.151	0.281	0.563%	69.602	-39.017	-35.921%
defocus_blur	2	46.14	-0.67	-1.431%	33.702	-0.308	-0.906%	49.677	-0.193	-0.387%	102.379	-6.24	-5.745%
motion_blur	2	45.88	-0.93	-1.987%	33.646	-0.364	-1.070%	49.577	-0.293	-0.588%	101.882	-6.737	-6.202%
glass_blur	2	45.97	-0.84	-1.794%	33.415	-0.595	-1.748%	49.548	-0.322	-0.646%	100.838	-7.781	-7.163%
gaussian_blur	2	46.4	-0.41	-0.876%	33.853	-0.157	-0.462%	49.734	-0.136	-0.272%	104.219	-4.4	-4.051%
jpeg_compression	2	46.32	-0.49	-1.047%	33.638	-0.372	-1.094%	49.648	-0.222	-0.444%	105.041	-3.578	-3.294%
contrast	2	45.57	-1.24	-2.649%	33.678	-0.332	-0.977%	49.49	-0.38	-0.761%	103.092	-5.527	-5.088%
elastic_transform	2	45.44	-1.37	-2.927%	33.074	-0.936	-2.753%	49.376	-0.494	-0.991%	91.795	-16.824	-15.489%
pixelate	2	44.8	-2.01	-4.294%	33.097	-0.913	-2.683%	49.821	-0.049	-0.099%	92.838	-15.781	-14.529%
snow	2	42.63	-4.18	-8.930%	31.356	-2.654	-7.803%	49.476	-0.394	-0.790%	81.032	-27.587	-25.398%
frost	2	43.16	-3.65	-7.797%	31.857	-2.153	-6.330%	49.462	-0.408	-0.819%	85.069	-23.55	-21.681%
fog	2	45.47	-1.34	-2.863%	33.614	-0.396	-1.164%	49.993	0.123	0.246%	103.199	-5.42	-4.990%
brightness	2	46.37	-0.44	-0.940%	33.662	-0.348	-1.023%	49.806	-0.064	-0.128%	107.112	-1.507	-1.388%
spatter	2	44.82	-1.99	-4.251%	32.779	-1.231	-3.618%	49.993	0.123	0.246%	96.582	-12.037	-11.081%
saturate	2	44.08	-2.73	-5.832%	33.614	-0.396	-1.164%	49.333	-0.537	-1.078%	99.905	-8.714	-8.022%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	3	45.26	-1.55	-3.311%	33.336	-0.674	-1.982%	49.476	-0.394	-0.790%	96.802	-11.817	-10.880%
gaussian_noise	3	45.52	-1.29	-2.756%	33.177	-0.833	-2.449%	49.318	-0.552	-1.106%	97.223	-11.396	-10.492%
shot_noise	3	45.44	-1.37	-2.927%	33.296	-0.714	-2.099%	49.462	-0.408	-0.819%	97.707	-10.912	-10.046%
speckle_noise	3	45.44	-1.37	-2.927%	33.312	-0.698	-2.052%	49.562	-0.308	-0.617%	97.664	-10.955	-10.085%
zoom_blur	3	40.93	-5.88	-12.561%	30.418	-3.592	-10.561%	50.395	0.525	1.052%	58.459	-50.16	-46.180%
defocus_blur	3	45.46	-1.35	-2.884%	33.145	-0.865	-2.543%	49.691	-0.179	-0.358%	96.366	-12.253	-11.280%
motion_blur	3	45.4	-1.41	-3.012%	33.384	-0.626	-1.842%	50.065	0.195	0.390%	95.118	-13.501	-12.430%
glass_blur	3	43.62	-3.19	-6.815%	31.277	-2.733	-8.036%	49.49	-0.38	-0.761%	80.695	-27.924	-25.708%
gaussian_blur	3	45.47	-1.34	-2.863%	33.137	-0.873	-2.566%	49.677	-0.193	-0.387%	98.701	-9.918	-9.131%
jpeg_compression	3	46.16	-0.65	-1.389%	33.916	-0.094	-0.275%	50.022	0.152	0.304%	104.927	-3.692	-3.399%
contrast	3	44.92	-1.89	-4.038%	33.296	-0.714	-2.099%	49.246	-0.624	-1.250%	99.132	-9.487	-8.735%
elastic_transform	3	46.1	-0.71	-1.517%	33.058	-0.952	-2.800%	49.749	-0.121	-0.243%	101.1	-7.519	-6.923%
pixelate	3	43.82	-2.99	-6.388%	32.183	-1.827	-5.371%	50.122	0.252	0.505%	83.466	-25.153	-23.157%
snow	3	41.46	-5.35	-11.429%	31.038	-2.972	-8.738%	49.404	-0.466	-0.934%	73.038	-35.581	-32.758%
frost	3	41.92	-4.89	-10.446%	30.967	-3.043	-8.948%	49.002	-0.868	-1.740%	76.414	-32.205	-29.650%
fog	3	44.98	-1.83	-3.909%	33.67	-0.34	-1.000%	49.605	-0.265	-0.531%	99.254	-9.365	-8.622%
brightness	3	46.04	-0.77	-1.645%	33.439	-0.571	-1.678%	49.763	-0.107	-0.214%	104.445	-4.174	-3.843%
spatter	3	44.12	-2.69	-5.747%	32.128	-1.882	-5.535%	49.993	0.123	0.246%	90.0	-18.619	-17.141%
saturate	3	46.7	-0.11	-0.235%	33.574	-0.436	-1.281%	49.62	-0.25	-0.502%	106.655	-1.964	-1.808%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	4	44.38	-2.43	-5.191%	32.43	-1.58	-4.647%	49.591	-0.279	-0.560%	88.377	-20.242	-18.635%
gaussian_noise	4	44.46	-2.35	-5.020%	32.636	-1.374	-4.039%	49.548	-0.322	-0.646%	88.193	-20.426	-18.806%
shot_noise	4	44.43	-2.38	-5.084%	32.923	-1.087	-3.197%	49.605	-0.265	-0.531%	87.759	-20.86	-19.205%
speckle_noise	4	44.84	-1.97	-4.209%	33.097	-0.913	-2.683%	49.361	-0.509	-1.020%	93.592	-15.027	-13.835%
zoom_blur	4	40.16	-6.65	-14.206%	29.456	-4.554	-13.390%	50.237	0.367	0.736%	50.053	-58.566	-53.919%
defocus_blur	4	44.81	-2.0	-4.273%	32.748	-1.262	-3.712%	49.189	-0.681	-1.365%	89.136	-19.483	-17.937%
motion_blur	4	44.24	-2.57	-5.490%	32.191	-1.819	-5.348%	49.706	-0.164	-0.329%	83.128	-25.491	-23.469%
glass_blur	4	42.91	-3.9	-8.332%	31.134	-2.876	-8.457%	49.534	-0.336	-0.675%	72.382	-36.237	-33.362%
gaussian_blur	4	44.77	-2.04	-4.358%	32.605	-1.405	-4.132%	49.117	-0.753	-1.509%	91.353	-17.266	-15.896%
jpeg_compression	4	45.62	-1.19	-2.542%	33.726	-0.284	-0.836%	49.447	-0.423	-0.847%	99.898	-8.721	-8.029%
contrast	4	42.91	-3.9	-8.332%	32.287	-1.723	-5.068%	49.002	-0.868	-1.740%	85.581	-23.038	-21.210%
elastic_transform	4	45.26	-1.55	-3.311%	32.438	-1.572	-4.623%	49.935	0.065	0.131%	93.178	-15.441	-14.216%
pixelate	4	42.26	-4.55	-9.720%	30.967	-3.043	-8.948%	49.648	-0.222	-0.444%	66.914	-41.705	-38.396%
snow	4	39.9	-6.91	-14.762%	29.862	-4.148	-12.197%	49.06	-0.81	-1.625%	58.747	-49.872	-45.915%
frost	4	41.63	-5.18	-11.066%	31.094	-2.916	-8.574%	49.376	-0.494	-0.991%	72.558	-36.061	-33.200%
fog	4	44.03	-2.78	-5.939%	32.652	-1.358	-3.992%	49.663	-0.207	-0.416%	94.25	-14.369	-13.229%
brightness	4	45.6	-1.21	-2.585%	33.392	-0.618	-1.818%	49.361	-0.509	-1.020%	103.259	-5.36	-4.935%
spatter	4	43.61	-3.2	-6.836%	31.794	-2.216	-6.517%	49.175	-0.695	-1.394%	81.102	-27.517	-25.333%
saturate	4	45.23	-1.58	-3.375%	32.891	-1.119	-3.291%	49.993	0.123	0.246%	100.906	-7.713	-7.101%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	5	42.83	-3.98	-8.502%	31.11	-2.9	-8.527%	49.333	-0.537	-1.078%	75.508	-33.111	-30.483%
gaussian_noise	5	42.85	-3.96	-8.460%	31.42	-2.59	-7.616%	49.132	-0.738	-1.481%	74.45	-34.169	-31.458%
shot_noise	5	42.99	-3.82	-8.161%	31.937	-2.073	-6.096%	49.189	-0.681	-1.365%	78.38	-30.239	-27.840%
speckle_noise	5	44.01	-2.8	-5.982%	32.708	-1.302	-3.829%	49.433	-0.437	-0.876%	87.429	-21.19	-19.5

Table 17: Performance and decrease ratio of Single Adapter on CLIP-BART against image corruptions given severity 1 to 5.

corruption	severity	VQA				GQA				NLVR				Caption	
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio		
impulse_noise	1	64.03	-1.32	-2.020%	48.863	-5.277	-9.747%	73.26	-0.63	-0.853%	109.007	-6.031	-5.242%		
gaussian_noise	1	64.88	-0.47	-0.719%	49.873	-4.267	-7.882%	73.446	-0.444	-0.601%	111.841	-3.197	-2.779%		
shot_noise	1	64.99	-0.36	-0.551%	49.785	-4.355	-8.043%	73.389	-0.501	-0.678%	112.405	-2.633	-2.288%		
speckle_noise	1	64.87	-0.48	-0.735%	49.587	-4.553	-8.410%	73.618	-0.272	-0.367%	112.232	-2.806	-2.440%		
zoom_blur	1	59.13	-6.22	-9.518%	46.621	-7.519	-13.888%	57.155	-16.735	-22.648%	87.848	-27.19	-23.635%		
defocus_blur	1	64.89	-0.46	-0.704%	49.833	-4.307	-7.955%	73.963	0.073	0.099%	111.174	-3.864	-3.358%		
motion_blur	1	64.82	-0.53	-0.811%	49.928	-4.212	-7.779%	73.662	-0.228	-0.309%	110.564	-4.474	-3.889%		
glass_blur	1	65.07	-0.28	-0.428%	50.016	-4.124	-7.617%	74.02	0.13	0.176%	112.183	-2.855	-2.482%		
gaussian_blur	1	65.62	0.27	0.413%	50.358	-3.782	-6.986%	74.236	0.346	0.468%	113.593	-1.445	-1.256%		
jpeg_compression	1	65.26	-0.09	-0.138%	49.809	-4.331	-7.999%	73.719	-0.171	-0.231%	112.803	-2.235	-1.943%		
contrast	1	64.6	-0.75	-1.148%	49.777	-4.363	-8.058%	73.618	-0.272	-0.367%	111.984	-3.054	-2.655%		
elastic_transform	1	65.19	-0.16	-0.245%	49.817	-4.323	-7.985%	73.59	-0.3	-0.406%	112.36	-2.678	-2.328%		
pixelate	1	62.39	-2.96	-4.529%	48.474	-5.666	-10.466%	72.599	-1.291	-1.747%	102.729	-12.309	-10.700%		
snow	1	61.59	-3.76	-5.754%	48.02	-6.12	-11.303%	72.068	-1.822	-2.465%	100.139	-14.899	-12.951%		
frost	1	62.54	-2.81	-4.300%	48.434	-5.706	-10.540%	72.571	-1.319	-1.786%	102.884	-12.154	-10.565%		
fog	1	64.01	-1.34	-2.050%	49.936	-4.204	-7.764%	73.561	-0.329	-0.445%	110.89	-4.148	-3.606%		
brightness	1	65.53	0.18	0.275%	50.135	-4.005	-7.397%	74.48	0.59	0.798%	113.34	-1.698	-1.476%		
spatter	1	65.35	0.0	0.000%	49.889	-4.251	-7.852%	74.078	0.188	0.254%	112.884	-2.154	-1.872%		
saturate	1	63.25	-2.1	-3.213%	49.316	-4.824	-8.910%	72.858	-1.032	-1.397%	111.428	-3.61	-3.138%		

corruption	severity	VQA				GQA				NLVR				Caption	
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio		
impulse_noise	2	63.07	-2.28	-3.489%	48.617	-5.523	-10.202%	72.025	-1.865	-2.524%	105.627	-9.411	-8.181%		
gaussian_noise	2	64.02	-1.33	-2.035%	49.428	-4.712	-8.704%	73.303	-0.587	-0.795%	109.739	-5.299	-4.606%		
shot_noise	2	63.9	-1.45	-2.219%	49.189	-4.951	-9.145%	72.858	-1.032	-1.397%	109.772	-5.266	-4.578%		
speckle_noise	2	64.33	-1.02	-1.561%	49.332	-4.808	-8.880%	73.044	-0.846	-1.144%	110.719	-4.319	-3.754%		
zoom_blur	2	55.8	-9.55	-14.614%	44.451	-9.689	-17.897%	62.523	-11.367	-15.383%	73.635	-41.403	-35.990%		
defocus_blur	2	64.4	-0.95	-1.454%	49.563	-4.577	-8.455%	73.432	-0.458	-0.620%	109.336	-5.702	-4.956%		
motion_blur	2	63.69	-1.66	-2.540%	49.626	-4.514	-8.337%	73.69	-0.2	-0.270%	107.598	-7.44	-6.468%		
glass_blur	2	63.67	-1.68	-2.571%	49.269	-4.871	-8.998%	72.8	-1.09	-1.475%	108.063	-6.975	-6.063%		
gaussian_blur	2	64.58	-0.77	-1.178%	49.602	-4.538	-8.381%	74.121	0.231	0.312%	110.353	-4.685	-4.072%		
jpeg_compression	2	65.29	-0.06	-0.092%	49.65	-4.49	-8.293%	73.217	-0.673	-0.911%	111.506	-3.532	-3.071%		
contrast	2	64.14	-1.21	-1.852%	49.261	-4.879	-9.913%	73.561	-0.329	-0.445%	109.626	-5.412	-4.704%		
elastic_transform	2	62.25	-3.1	-4.744%	49.078	-5.062	-9.350%	70.289	-3.601	-4.874%	97.775	-17.263	-15.006%		
pixelate	2	61.77	-3.58	-5.478%	47.925	-6.215	-11.480%	69.169	-4.721	-6.389%	100.404	-14.634	-12.721%		
snow	2	58.49	-6.86	-10.497%	46.025	-8.115	-14.989%	69.413	-4.477	-6.059%	88.321	-26.717	-23.225%		
frost	2	59.16	-6.19	-9.472%	46.08	-8.06	-14.886%	70.676	-3.214	-4.350%	91.341	-23.697	-20.599%		
fog	2	63.35	-2.0	-3.060%	49.42	-4.72	-8.719%	69.729	-4.161	-5.632%	109.577	-5.461	-4.747%		
brightness	2	64.98	-0.37	-0.566%	50.024	-4.116	-7.603%	73.862	-0.028	-0.037%	113.192	-1.846	-1.604%		
spatter	2	61.89	-3.46	-5.295%	48.577	-5.563	-10.275%	71.824	-2.066	-2.796%	104.846	-10.192	-8.859%		
saturate	2	60.07	-5.28	-8.080%	48.243	-5.897	-10.892%	70.848	-3.042	-4.117%	105.558	-9.48	-8.241%		

corruption	severity	VQA				GQA				NLVR				Caption	
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio		
impulse_noise	3	62.07	-3.28	-5.019%	48.481	-5.659	-10.452%	71.236	-2.654	-3.592%	102.932	-12.106	-10.524%		
gaussian_noise	3	62.18	-3.17	-4.851%	48.64	-5.5	-10.158%	71.308	-2.582	-3.495%	104.383	-10.655	-9.262%		
shot_noise	3	62.39	-2.96	-4.529%	48.672	-5.468	-10.099%	71.451	-2.439	-3.301%	104.749	-10.289	-8.944%		
speckle_noise	3	62.82	-2.53	-3.871%	48.72	-5.42	-10.011%	72.04	-1.85	-2.504%	104.894	-10.144	-8.818%		
zoom_blur	3	53.05	-12.3	-18.822%	42.996	-11.144	-20.584%	59.538	-14.352	-19.424%	58.638	-56.4	-49.028%		
defocus_blur	3	62.42	-2.93	-4.484%	48.394	-5.746	-10.613%	71.839	-2.051	-2.776%	102.714	-12.324	-10.713%		
motion_blur	3	61.83	-3.52	-5.386%	48.792	-5.348	-9.879%	71.465	-2.425	-3.281%	101.501	-13.537	-11.767%		
glass_blur	3	58.84	-6.51	-9.962%	45.937	-8.203	-15.151%	69.786	-4.104	-5.554%	86.792	-28.246	-24.553%		
gaussian_blur	3	63.26	-2.09	-3.198%	48.704	-5.436	-10.040%	71.853	-2.037	-2.757%	105.781	-9.257	-8.047%		
jpeg_compression	3	64.83	-0.52	-0.796%	50.072	-4.068	-7.515%	73.145	-0.745	-1.008%	111.081	-3.957	-3.440%		
contrast	3	62.8	-2.55	-3.902%	48.537	-5.603	-10.349%	71.896	-1.994	-2.698%	105.345	-9.693	-8.426%		
elastic_transform	3	63.81	-1.54	-2.357%	49.292	-4.848	-8.954%	72.743	-1.147	-1.552%	107.885	-7.153	-6.218%		
pixelate	3	59.32	-6.03	-9.227%	46.128	-8.012	-14.798%	67.475	-6.415	-8.681%	90.111	-24.927	-21.669%		
snow	3	56.63	-8.72	-13.344%	44.069	-10.071	-18.602%	67.332	-6.558	-8.876%	81.487	-33.551	-29.165%		
frost	3	56.55	-8.8	-13.466%	44.84	-9.3	-17.177%	67.891	-5.999	-8.118%	81.86	-33.178	-28.841%		
fog	3	62.17	-3.18	-4.866%	48.855	-5.285	-9.761%	72.169	-1.721	-2.329%	106.133	-8.905	-7.741%		
brightness	3	64.41	-0.94	-1.438%	49.459	-4.681	-8.645%	72.872	-1.018	-1.378%	112.042	-2.996	-2.605%		
spatter	3	60.9	-4.45	-6.809%	48.1	-6.04	-11.157%	70.992	-2.898	-3.922%	97.078	-17.96	-15.612%		
saturate	3	65.18	-0.17	-0.260%	49.897	-4.243	-7.838%	74.178	0.288	0.390%	112.3	-2.738	-2.380%		

corruption	severity	VQA				GQA				NLVR				Caption	
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio		
impulse_noise	4	59.67	-5.68	-8.692%	47.615	-6.525	-12.052%	69.887	-4.003	-5.418%	93.318	-21.72	-18.881%		
gaussian_noise	4	59.55	-5.8	-8.875%	47.702	-6.438	-11.891%	69.872	-4.018	-5.437%	95.42	-19.618	-17.054%		
shot_noise	4	59.34	-6.01	-9.197%	47.424	-6.716	-12.405%	69.155	-4.735	-6.409%	93.488	-21.55	-18.733%		
speckle_noise	4	61.44	-3.91	-5.983%	47.822	-6.318	-11.670%	70.877	-3.013	-4.078%	100.403	-14.235	-12.374%		
zoom_blur	4	50.89	-14.46	-22.127%	41.207	-12.933	-23.888%	57.471	-16.419	-22.221%	48.711	-66.327	-57.657%		
defocus_blur	4	60.54	-4.81	-7.360%	47.472	-6.668	-12.317%	69.915	-3.975	-5.379%	95.936	-19.102	-16.605%		
motion_blur	4	59.18	-6.17	-9.441%	47.83	-6.31	-11.656%	68.681	-5.209	-7.050%	88.465	-26.573	-23.099%		
glass_blur	4	56.77	-8.58	-13.129%	44.57	-9.57	-17.677%	68.624	-5.266	-7.127%	79.597	-35.441	-30.808%		
gaussian_blur	4	61.34	-4.01	-6.136%	47.957	-6.183	-11.421%	70.504	-3.386	-4.583%	97.671	-17.367	-15.097%		
jpeg_compression	4	63.54	-1.81	-2.770%	49.118	-5.022	-9.277%	72.312	-1.578	-2.135%	107.37	-7.668	-6.666%		
contrast	4	58.46	-6.89	-10.543%	45.929	-8.211	-15.165%	68.724	-5.166	-6.991%	91.302	-23.736	-20.633%		
elastic_transform	4	61.62	-3.73	-5.708%	47.909	-6.231	-11.509%	72.011	-1.879	-2.543%	98.955	-16.083	-13.981%		
pixelate	4	55.01	-10.34	-15.822%	44.284	-9.856	-18.205%	64.274	-9.616	-13.013%	73.703	-41.335	-35.932%		
snow	4	53.43	-11.92	-18.240%	42.439	-11.701	-21.612%	64.877	-9.013	-12.197%	65.462	-49.576	-43.096%		
frost	4	55.81	-9.54	-14.598%	44.252	-9.888	-18.264%	68.322	-5.568	-7.535%	78.427	-36.611	-31.825%		
fog	4	60.53	-4.82	-7.376%	47.647	-6.493	-11.994%	71.451	-2.439	-3.301%	100.557	-14.481	-12.588%		
brightness	4	63.6	-1.75	-2.678%	49.213	-4.927	-9.101%	71.824	-2.066	-2.796%	108.604	-6.434	-5.593%		
spatter	4	58.17	-7.18	-10.987%	45.492	-8.648	-15.973%	68.408	-5.482	-7.419%	87.985	-27.053	-23.517%		
saturate	4	62.08	-3.27	-5.004%	48.092	-6.048	-11.171%	71.623	-2.267	-3.068%	107.11	-7.928	-6.892%		

corruption	severity	VQA				GQA				NLVR				Caption	
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio		
impulse_noise	5	55.61	-9.74	-14.904%	45.031	-9.109	-16.825%	67.203	-6.687	-9.051%	80.804	-34.234	-29.759%		
gaussian_noise	5	55.61	-9.74	-14.904%	44.864	-9.276	-17.133%	66.915	-6.975	-9.439%	79.906	-35.132	-30.539%		
shot_noise	5	56.57	-8.78	-13.435%	45.58	-8.56	-15.812%	66.743	-7.147	-9.672%	84.103	-30.935	-26.891%		
speckle_noise	5	59.3	-6.05	-9.258%	47.702	-6.438									

Table 18: Performance and decrease ratio of Single Compacter on CLIP-BART against image corruptions given severity 1 to 5.

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	1	62.38	-2.09	-3.242%	48.012	-4.888	-9.239%	70.217	0.277	0.396%	108.307	-4.753	-4.204%
gaussian_noise	1	63.45	-1.02	-1.582%	48.847	-4.053	-7.661%	69.571	-0.369	-0.528%	111.056	-2.004	-1.772%
shot_noise	1	63.46	-1.01	-1.567%	49.269	-3.631	-6.865%	70.016	0.076	0.108%	111.082	-1.978	-1.749%
speckle_noise	1	63.35	-1.12	-1.737%	48.736	-4.164	-7.872%	70.418	0.478	0.683%	111.427	-1.633	-1.444%
zoom_blur	1	57.83	-6.64	-10.299%	45.19	-7.71	-14.575%	56.696	-13.244	-18.936%	87.734	-25.326	-22.401%
defocus_blur	1	63.58	-0.89	-1.380%	48.513	-4.387	-8.292%	70.289	0.349	0.498%	110.1	-2.96	-2.618%
motion_blur	1	63.21	-1.26	-1.954%	48.712	-4.188	-7.917%	70.03	0.09	0.129%	108.606	-4.454	-3.939%
glass_blur	1	63.63	-0.84	-1.303%	48.609	-4.291	-8.112%	70.001	0.061	0.088%	110.944	-2.116	-1.871%
gaussian_blur	1	64.12	-0.35	-0.543%	49.475	-3.425	-6.474%	70.102	0.162	0.231%	112.676	-3.84	-3.40%
jpeg_compression	1	63.9	-0.57	-0.884%	48.609	-4.291	-8.112%	70.446	0.506	0.724%	111.881	-1.179	-1.043%
contrast	1	63.16	-1.31	-2.032%	48.784	-4.116	-7.781%	70.016	0.076	0.108%	111.04	-2.02	-1.787%
elastic_transform	1	63.8	-0.67	-1.039%	48.982	-3.918	-7.406%	69.829	-0.111	-0.158%	110.973	-2.087	-1.846%
pixelate	1	61.0	-3.47	-5.382%	47.122	-5.778	-10.923%	69.112	-0.828	-1.185%	101.596	-11.464	-10.139%
snow	1	59.57	-4.9	-7.600%	46.478	-6.422	-12.140%	68.652	-1.288	-1.841%	97.941	-15.119	-13.373%
frost	1	61.21	-3.26	-5.057%	47.599	-5.301	-10.021%	68.81	-1.13	-1.616%	102.993	-10.067	-8.904%
fog	1	62.5	-1.97	-3.056%	48.458	-4.442	-8.398%	69.657	-0.283	-0.405%	110.028	-3.032	-2.682%
brightness	1	64.18	-0.29	-0.450%	49.269	-3.631	-6.865%	70.446	0.506	0.724%	112.716	-0.344	-0.304%
spatter	1	63.83	-0.64	-0.993%	48.935	-3.965	-7.496%	70.489	0.549	0.786%	112.987	-0.073	-0.065%
saturate	1	61.63	-2.84	-4.405%	47.989	-4.911	-9.284%	69.126	-0.814	-1.164%	110.143	-2.917	-2.580%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	2	61.76	-2.71	-4.204%	47.869	-5.031	-9.510%	69.011	-0.929	-1.328%	104.634	-8.426	-7.453%
gaussian_noise	2	62.7	-1.77	-2.745%	48.41	-4.49	-8.488%	69.844	-0.096	-0.138%	108.907	-4.153	-3.674%
shot_noise	2	62.72	-1.75	-2.714%	48.338	-4.562	-8.623%	69.499	-0.441	-0.630%	108.111	-4.949	-4.377%
speckle_noise	2	63.13	-1.34	-2.078%	48.378	-4.522	-8.548%	69.585	-0.355	-0.507%	109.028	-4.032	-3.567%
zoom_blur	2	55.04	-9.43	-14.627%	43.33	-9.57	-18.091%	61.992	-7.948	-11.364%	75.32	-37.74	-33.381%
defocus_blur	2	62.91	-1.56	-2.420%	48.577	-4.323	-8.172%	69.686	-0.254	-0.364%	108.118	-4.942	-4.371%
motion_blur	2	62.52	-1.95	-3.025%	48.092	-4.808	-9.909%	69.528	-0.412	-0.589%	106.139	-6.921	-6.121%
glass_blur	2	62.21	-2.26	-3.506%	48.187	-4.713	-8.909%	68.753	-1.187	-1.698%	105.509	-7.551	-6.679%
gaussian_blur	2	63.1	-1.37	-2.125%	48.648	-4.252	-8.037%	69.973	0.033	0.047%	108.869	-4.191	-3.707%
jpeg_compression	2	63.78	-0.69	-1.070%	48.513	-4.387	-8.292%	70.518	0.578	0.827%	111.731	-1.329	-1.175%
contrast	2	62.46	-2.01	-3.118%	48.243	-4.657	-8.803%	69.47	-0.47	-0.671%	108.788	-4.272	-3.778%
elastic_transform	2	60.91	-3.56	-5.522%	47.44	-5.46	-10.321%	66.758	-3.182	-4.550%	97.209	-15.851	-14.020%
pixelate	2	60.54	-3.93	-6.096%	46.923	-5.977	-11.298%	66.887	-3.053	-4.366%	99.414	-13.646	-12.069%
snow	2	57.03	-7.44	-11.540%	44.387	-8.513	-16.093%	67.131	-2.809	-4.017%	87.136	-25.924	-22.929%
frost	2	57.88	-6.59	-10.222%	45.556	-7.344	-13.883%	67.475	-2.465	-3.524%	90.786	-22.274	-19.701%
fog	2	61.88	-2.59	-4.017%	48.084	-4.816	-9.104%	66.169	-3.771	-5.392%	109.011	-4.049	-3.582%
brightness	2	63.68	-0.79	-1.225%	48.807	-4.093	-7.736%	70.059	0.119	0.170%	111.73	-1.33	-1.177%
spatter	2	60.59	-3.88	-6.018%	47.392	-5.508	-10.412%	69.312	-0.628	-0.897%	103.723	-9.337	-8.259%
saturate	2	58.7	-5.77	-8.950%	47.098	-5.802	-10.968%	67.289	-2.651	-3.791%	105.315	-7.745	-6.851%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	3	60.71	-3.76	-5.832%	47.353	-5.547	-10.487%	68.48	-1.46	-2.088%	102.629	-10.431	-9.226%
gaussian_noise	3	60.94	-3.53	-5.475%	47.694	-5.206	-9.840%	68.882	-1.058	-1.513%	103.945	-9.115	-8.062%
shot_noise	3	60.91	-3.56	-5.522%	47.957	-4.943	-9.345%	68.566	-1.374	-1.964%	104.135	-8.925	-7.894%
speckle_noise	3	61.16	-3.31	-5.134%	47.965	-4.935	-9.329%	68.394	-1.546	-2.211%	104.032	-9.028	-7.985%
zoom_blur	3	52.61	-11.86	-18.396%	42.05	-10.85	-20.511%	59.294	-10.646	-15.222%	61.902	-51.158	-45.249%
defocus_blur	3	60.95	-3.52	-5.460%	47.122	-5.778	-10.923%	69.068	-0.872	-1.246%	102.474	-10.586	-9.363%
motion_blur	3	60.58	-3.89	-6.034%	47.201	-5.699	-10.772%	68.48	-1.46	-2.088%	99.581	-13.479	-11.922%
glass_blur	3	57.24	-7.23	-11.215%	44.236	-8.664	-16.378%	67.647	-2.293	-3.278%	86.811	-26.249	-23.217%
gaussian_blur	3	61.63	-2.84	-4.405%	47.822	-5.078	-9.600%	69.47	-0.47	-0.671%	105.023	-8.037	-7.108%
jpeg_compression	3	63.28	-1.19	-1.846%	48.601	-4.299	-8.127%	70.245	0.305	0.437%	110.761	-2.299	-2.034%
contrast	3	61.11	-3.36	-5.212%	47.209	-5.691	-10.757%	68.308	-1.632	-2.334%	104.222	-8.838	-7.817%
elastic_transform	3	62.47	-2.0	-3.102%	47.806	-5.094	-9.630%	69.628	-0.312	-0.446%	105.382	-7.678	-6.791%
pixelate	3	57.98	-6.49	-10.067%	45.277	-7.623	-14.409%	65.853	-4.087	-5.843%	89.552	-23.508	-20.793%
snow	3	55.24	-9.23	-14.317%	43.568	-9.332	-17.641%	65.767	-4.173	-5.966%	79.518	-33.542	-29.668%
frost	3	55.67	-8.8	-13.650%	44.021	-8.879	-16.784%	66.226	-3.714	-5.310%	82.75	-30.31	-26.809%
fog	3	60.67	-3.8	-5.894%	47.655	-5.245	-9.916%	68.638	-1.302	-1.862%	105.889	-7.171	-6.343%
brightness	3	62.85	-1.62	-2.513%	48.148	-4.752	-8.984%	69.571	-0.369	-0.528%	110.337	-2.723	-2.409%
spatter	3	59.42	-5.05	-7.833%	46.788	-6.112	-11.554%	68.595	-1.345	-1.923%	95.991	-17.069	-15.097%
saturate	3	63.54	-0.93	-1.443%	48.315	-4.585	-8.668%	70.576	0.636	0.909%	111.529	-1.531	-1.354%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	4	58.47	-6.0	-9.307%	46.398	-6.502	-12.290%	67.547	-2.393	-3.421%	94.706	-18.354	-16.234%
gaussian_noise	4	58.56	-5.91	-9.167%	46.836	-6.064	-11.464%	67.36	-2.58	-3.688%	95.277	-17.783	-15.729%
shot_noise	4	58.29	-6.18	-9.586%	46.2	-6.7	-12.666%	66.657	-3.283	-4.694%	93.333	-19.727	-17.448%
speckle_noise	4	59.92	-4.55	-7.058%	46.939	-5.961	-11.268%	67.418	-2.522	-3.606%	99.83	-13.23	-11.702%
zoom_blur	4	50.66	-13.81	-21.421%	40.189	-12.711	-24.028%	56.897	-13.043	-18.649%	52.847	-60.213	-53.258%
defocus_blur	4	59.47	-5.0	-7.756%	46.375	-6.525	-12.335%	67.891	-2.049	-2.929%	94.513	-18.547	-16.404%
motion_blur	4	58.07	-6.4	-9.927%	45.858	-7.042	-13.312%	67.03	-2.91	-4.160%	87.978	-25.082	-22.185%
glass_blur	4	55.51	-8.96	-13.898%	43.043	-9.857	-18.632%	66.241	-3.699	-5.289%	79.572	-33.488	-29.619%
gaussian_blur	4	59.98	-4.49	-6.964%	46.526	-6.374	-12.050%	68.279	-1.661	-2.375%	98.277	-14.783	-13.075%
jpeg_compression	4	62.43	-2.04	-3.164%	47.607	-5.293	-10.006%	69.686	-0.254	-0.364%	109.345	-5.715	-5.054%
contrast	4	57.42	-7.05	-10.935%	45.134	-7.766	-14.680%	65.25	-4.69	-6.705%	91.25	-21.81	-19.290%
elastic_transform	4	60.54	-3.93	-6.096%	46.605	-6.295	-11.899%	69.169	-0.771	-1.102%	99.043	-14.017	-12.398%
pixelate	4	54.08	-10.39	-16.116%	43.123	-9.777	-18.482%	61.605	-8.335	-11.918%	73.492	-39.568	-34.997%
snow	4	51.91	-12.56	-19.482%	41.437	-11.463	-21.668%	63.169	-6.771	-9.681%	64.718	-48.342	-42.758%
frost	4	54.35	-10.12	-15.697%	43.187	-9.713	-18.362%	66.313	-3.627	-5.186%	78.315	-34.745	-30.732%
fog	4	59.13	-5.34	-8.283%	46.327	-6.573	-12.425%	67.963	-1.977	-2.826%	100.583	-12.477	-11.036%
brightness	4	62.02	-2.45	-3.800%	47.678	-5.222	-9.871%	68.724	-1.216	-1.739%	107.612	-5.448	-4.819%
spatter	4	56.94	-7.53	-11.680%	44.745	-8.155	-15.416%	66.341	-3.599	-5.145%	86.484	-26.576	-23.506%
saturate	4	60.69	-3.78	-5.863%	46.868	-6.032	-11.404%	68.71	-1.23	-1.759%	105.87	-7.19	-6.360%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	5	54.78	-9.69	-15.030%	44.371	-8.529	-16.123%	65.25	-4.69	-6.705%	81.779	-31.281	-27.668%
gaussian_noise	5	54.69	-9.78	-15.170%	44.403	-8.497	-16.063%	65.279	-4.661	-6.664%	80.075	-32.985	-29.175%
shot_noise	5	55.68	-8.79	-13.634%	44.864	-8.036	-15.191%	64.748	-5.192	-7.423%	83.994	-29.066	-25.709%
speckle_noise	5	58.11	-6.36	-9.865%	46.088	-6.812	-12.						

Table 19: Performance and decrease ratio of Single LoRA on CLIP-BART against image corruptions given severity 1 to 5.

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	1	63.06	-2.28	-3.489%	48.036	-5.154	-9.689%	72.614	-0.966	-1.313%	108.958	-5.585	-4.876%
gaussian_noise	1	63.9	-1.44	-2.204%	48.179	-5.011	-9.420%	72.987	-0.593	-0.806%	111.859	-2.684	-2.343%
shot_noise	1	63.9	-1.44	-2.204%	48.712	-4.478	-8.419%	72.93	-0.65	-0.884%	111.362	-4.877	-4.277%
speckle_noise	1	63.97	-1.37	-2.097%	48.752	-4.438	-8.344%	72.671	-0.909	-1.235%	111.538	-3.005	-2.623%
zoom_blur	1	58.19	-7.15	-10.943%	45.429	-7.761	-14.592%	58.677	-14.903	-20.255%	86.603	-27.94	-24.393%
defocus_blur	1	64.07	-1.27	-1.944%	48.879	-4.311	-8.105%	73.016	-0.564	-0.767%	111.315	-3.228	-2.819%
motion_blur	1	64.08	-1.26	-1.928%	48.283	-4.907	-9.226%	73.403	-0.177	-0.240%	109.757	-4.786	-4.178%
glass_blur	1	64.07	-1.27	-1.944%	48.736	-4.454	-8.374%	73.371	-0.263	-0.357%	110.711	-3.832	-3.345%
gaussian_blur	1	64.78	-0.56	-0.857%	49.173	-4.017	-7.552%	73.791	0.211	0.286%	113.37	-1.173	-1.024%
jpeg_compression	1	64.52	-0.82	-1.255%	49.086	-4.104	-7.716%	72.872	-0.708	-0.962%	112.734	-1.809	-1.579%
contrast	1	63.72	-1.62	-2.479%	48.696	-4.494	-8.449%	73.001	-0.579	-0.787%	111.418	-3.125	-2.729%
elastic_transform	1	64.49	-0.85	-1.301%	49.181	-4.009	-7.537%	72.442	-1.138	-1.547%	111.973	-2.57	-2.244%
pixelate	1	61.14	-4.2	-6.428%	47.265	-5.925	-11.139%	71.48	-2.1	-2.854%	102.811	-11.732	-10.242%
snow	1	60.18	-5.16	-7.897%	46.701	-6.489	-12.200%	71.236	-2.344	-3.186%	99.386	-15.157	-13.233%
frost	1	61.78	-3.56	-5.448%	47.392	-5.798	-10.900%	71.379	-2.201	-2.991%	102.864	-11.679	-10.196%
fog	1	63.1	-2.24	-3.428%	48.402	-4.788	-9.902%	72.398	-1.182	-1.606%	110.773	-3.77	-3.291%
brightness	1	64.85	-0.49	-0.750%	49.237	-3.953	-7.432%	73.504	-0.076	-0.104%	113.739	-0.804	-0.702%
spatter	1	64.45	-0.89	-1.362%	49.284	-3.906	-7.343%	73.432	-0.148	-0.201%	112.657	-1.886	-1.647%
saturate	1	62.13	-3.21	-4.913%	47.909	-5.281	-9.928%	71.609	-1.971	-2.679%	110.161	-4.382	-3.826%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	2	62.1	-3.24	-4.959%	47.957	-5.233	-9.839%	72.025	-1.555	-2.113%	105.736	-8.807	-7.689%
gaussian_noise	2	63.05	-2.29	-3.505%	47.758	-5.432	-10.212%	72.169	-1.411	-1.918%	109.572	-4.971	-4.340%
shot_noise	2	62.87	-2.47	-3.780%	47.845	-5.345	-10.048%	72.47	-1.11	-1.508%	108.551	-5.992	-5.231%
speckle_noise	2	63.46	-1.88	-2.877%	48.307	-4.883	-9.181%	72.298	-1.282	-1.742%	109.917	-4.626	-4.039%
zoom_blur	2	55.27	-10.07	-15.412%	44.196	-8.994	-16.909%	63.212	-10.368	-14.090%	73.46	-41.083	-35.867%
defocus_blur	2	63.3	-2.04	-3.122%	48.728	-4.462	-8.389%	72.226	-1.354	-1.840%	109.109	-5.434	-4.744%
motion_blur	2	62.82	-2.52	-3.857%	48.012	-5.178	-9.734%	72.8	-0.78	-1.060%	106.62	-7.923	-6.917%
glass_blur	2	62.8	-2.54	-3.887%	48.124	-5.066	-9.525%	72.255	-1.325	-1.801%	106.694	-7.849	-6.853%
gaussian_blur	2	63.67	-1.67	-2.556%	48.696	-4.494	-8.449%	73.001	-0.579	-0.787%	109.134	-5.409	-4.722%
jpeg_compression	2	64.41	-0.93	-1.423%	48.315	-4.875	-9.166%	73.03	-0.55	-0.747%	112.252	-2.291	-2.000%
contrast	2	62.82	-2.52	-3.857%	48.171	-5.019	-9.435%	72.269	-1.311	-1.781%	109.635	-4.908	-4.285%
elastic_transform	2	61.37	-3.97	-6.076%	46.748	-6.442	-12.111%	69.513	-4.067	-5.527%	96.654	-17.889	-15.618%
pixelate	2	60.63	-4.71	-7.208%	47.194	-5.996	-11.274%	68.624	-4.956	-6.736%	99.434	-15.109	-13.191%
snow	2	57.21	-8.13	-12.443%	44.737	-8.453	-15.892%	68.667	-4.913	-6.678%	88.402	-22.141	-22.822%
frost	2	58.36	-6.98	-10.683%	45.691	-7.499	-14.099%	69.513	-4.067	-5.527%	91.338	-23.205	-20.259%
fog	2	62.28	-3.06	-4.683%	48.37	-4.82	-9.062%	68.207	-5.373	-7.302%	108.536	-6.03	-5.264%
brightness	2	64.28	-1.06	-1.622%	49.197	-3.993	-7.507%	72.815	-0.765	-1.040%	113.05	-1.493	-1.303%
spatter	2	61.17	-4.17	-6.382%	47.671	-5.519	-10.377%	71.552	-2.028	-2.757%	103.588	-10.955	-9.564%
saturate	2	59.18	-6.16	-9.428%	47.337	-5.853	-11.005%	69.858	-3.722	-5.059%	105.82	-8.723	-7.615%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	3	61.21	-4.13	-6.321%	47.384	-5.806	-10.915%	70.934	-2.646	-3.596%	103.522	-11.021	-9.621%
gaussian_noise	3	61.36	-3.98	-6.091%	47.376	-5.814	-10.930%	71.422	-2.158	-2.932%	103.362	-11.181	-9.762%
shot_noise	3	61.22	-4.12	-6.305%	47.71	-5.48	-10.302%	70.863	-2.717	-3.693%	103.926	-10.617	-9.269%
speckle_noise	3	61.7	-3.64	-5.571%	47.615	-5.575	-10.482%	70.906	-2.674	-3.635%	104.399	-10.144	-8.856%
zoom_blur	3	52.63	-12.71	-19.452%	41.827	-11.363	-21.363%	60.729	-12.851	-17.465%	60.226	-54.317	-47.421%
defocus_blur	3	61.45	-3.89	-5.953%	47.36	-5.83	-10.960%	70.604	-2.976	-4.044%	102.944	-11.599	-10.126%
motion_blur	3	60.76	-4.58	-7.009%	47.297	-5.893	-11.079%	71.379	-2.201	-2.991%	99.824	-14.719	-12.850%
glass_blur	3	58.01	-7.33	-11.218%	44.959	-8.231	-15.474%	69.585	-3.995	-5.429%	87.805	-26.638	-23.256%
gaussian_blur	3	62.24	-3.1	-4.744%	48.004	-5.186	-9.749%	71.322	-2.258	-3.069%	104.888	-9.655	-8.429%
jpeg_compression	3	63.99	-1.35	-2.066%	48.45	-4.74	-8.912%	72.542	-1.038	-1.411%	111.219	-3.324	-2.902%
contrast	3	61.6	-3.74	-5.724%	47.591	-5.599	-10.526%	70.834	-2.746	-3.732%	105.57	-8.973	-7.834%
elastic_transform	3	62.97	-2.37	-3.627%	48.02	-5.17	-9.719%	72.757	-0.823	-1.118%	107.975	-6.568	-5.734%
pixelate	3	58.51	-6.83	-10.453%	45.238	-7.952	-14.951%	66.844	-6.736	-9.155%	90.065	-24.478	-21.370%
snow	3	55.74	-9.6	-14.692%	43.711	-9.479	-17.821%	66.844	-6.736	-9.155%	80.578	-33.965	-29.652%
frost	3	55.94	-9.4	-14.386%	44.22	-8.97	-16.864%	67.705	-5.875	-7.985%	82.324	-32.219	-28.128%
fog	3	61.13	-4.21	-6.443%	48.132	-5.058	-9.510%	71.552	-2.028	-2.757%	105.853	-8.69	-7.586%
brightness	3	63.51	-1.83	-2.801%	48.338	-4.852	-9.121%	72.528	-1.052	-1.430%	110.715	-3.828	-3.342%
spatter	3	59.7	-5.64	-8.632%	46.351	-6.839	-12.858%	70.877	-2.703	-3.674%	96.886	-17.657	-15.415%
saturate	3	64.25	-1.09	-1.668%	48.259	-4.931	-9.271%	72.815	-0.765	-1.040%	111.882	-2.661	-2.323%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	4	58.42	-6.92	-10.591%	46.327	-6.863	-12.903%	68.982	-4.598	-6.249%	93.878	-20.665	-18.041%
gaussian_noise	4	59.01	-6.33	-9.688%	46.661	-6.529	-12.275%	69.054	-4.526	-6.151%	96.203	-18.34	-16.661%
shot_noise	4	58.29	-7.05	-10.790%	46.311	-6.879	-12.933%	69.054	-4.526	-6.151%	94.592	-19.951	-17.418%
speckle_noise	4	59.93	-5.41	-8.280%	47.313	-5.877	-11.050%	70.044	-3.536	-4.805%	101.619	-12.924	-11.283%
zoom_blur	4	50.88	-14.46	-22.130%	40.38	-12.81	-24.083%	59.15	-14.43	-19.611%	50.257	-64.286	-56.124%
defocus_blur	4	59.47	-5.87	-8.984%	46.637	-6.553	-12.320%	69.829	-3.751	-5.098%	95.621	-18.922	-16.520%
motion_blur	4	58.3	-7.04	-10.774%	46.343	-6.847	-12.873%	68.624	-4.956	-6.736%	87.717	-26.826	-23.420%
glass_blur	4	56.24	-9.1	-13.927%	43.743	-9.447	-17.761%	68.824	-4.756	-6.463%	79.445	-35.098	-30.642%
gaussian_blur	4	60.26	-5.08	-7.775%	46.78	-6.41	-12.051%	70.576	-3.004	-4.083%	97.958	-16.585	-14.480%
jpeg_compression	4	62.55	-2.79	-4.270%	47.726	-5.464	-10.272%	71.738	-1.842	-2.503%	106.674	-7.869	-6.870%
contrast	4	57.65	-7.69	-11.769%	45.611	-7.579	-14.248%	67.805	-5.775	-7.848%	92.032	-22.511	-19.653%
elastic_transform	4	60.95	-4.39	-6.719%	46.828	-6.362	-11.961%	71.753	-1.827	-2.484%	99.181	-15.362	-13.412%
pixelate	4	54.42	-10.92	-16.713%	42.19	-10.29	-19.345%	63.585	-9.995	-13.583%	73.761	-40.782	-35.604%
snow	4	52.74	-12.6	-19.284%	42.37	-11.053	-20.780%	64.504	-9.076	-12.335%	65.683	-48.86	-42.657%
frost	4	55.16	-10.18	-15.580%	43.799	-9.391	-17.656%	67.59	-5.99	-8.141%	79.575	-34.786	-30.370%
fog	4	59.66	-5.68	-8.693%	46.732	-6.458	-12.141%	70.777	-2.803	-3.810%	101.097	-13.446	-11.739%
brightness	4	62.69	-2.65	-4.056%	48.06	-5.13	-9.644%	71.566	-2.014	-2.737%	108.235	-6.308	-5.507%
spatter	4	57.6	-7.74	-11.846%	44.864	-8.326	-15.653%	69.025	-4.555	-6.190%	87.767	-26.776	-23.376%
saturate	4	61.19	-4.15	-6.351%	47.154	-6.036	-11.348%	71.035	-2.545	-3.459%	106.855	-7.688	-6.712%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	5	54.72	-10.62	-16.253%	44.618	-8.572	-16.117%	66.801	-6.779	-9.214%	81.349	-33.194	-28.979%
gaussian_noise	5	54.93	-10.41	-15.932%	43.999	-9.2	-17.297%	66.844	-6.736	-9.155%	81.511	-33.032	-28.838%
shot_noise	5	55.59	-9.75	-14.922%	45.039	-8.151	-15.324%	66.628	-6.952	-9.448%	85.88	-28.663	-25.024%
speckle_noise	5	58.38	-6.96	-10.652%	46.								

Table 20: Performance and decrease ratio of Single Prompt on CLIP-BART against image corruptions given severity 1 to 5.

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	1	43.08	-0.92	-2.091%	37.033	-0.507	-1.351%	52.289	0.339	0.653%	98.322	-5.378	-5.186%
gaussian_noise	1	43.45	-0.55	-1.250%	37.112	-0.428	-1.139%	52.332	0.382	0.736%	100.992	-2.708	-2.611%
shot_noise	1	43.4	-0.6	-1.364%	37.391	-0.149	-0.398%	51.974	0.024	0.045%	100.786	-2.914	-2.810%
speckle_noise	1	43.48	-0.52	-1.182%	37.438	-0.102	-0.271%	52.49	0.54	1.040%	100.787	-2.913	-2.809%
zoom_blur	1	41.64	-2.36	-5.364%	35.546	-1.994	-5.311%	51.643	-0.307	-0.590%	78.501	-25.199	-24.300%
defocus_blur	1	43.56	-0.44	-1.000%	37.112	-0.428	-1.139%	52.103	0.153	0.294%	100.306	-3.394	-3.272%
motion_blur	1	43.55	-0.45	-1.023%	37.081	-0.459	-1.224%	52.088	0.138	0.266%	99.851	-3.849	-3.712%
glass_blur	1	43.69	-0.31	-0.705%	37.057	-0.483	-1.287%	51.816	-0.134	-0.259%	100.838	-2.862	-2.760%
gaussian_blur	1	43.89	-0.11	-0.250%	37.383	-0.157	-0.419%	51.615	-0.335	-0.645%	102.584	-1.116	-1.076%
jpeg_compression	1	43.82	-0.18	-0.409%	37.375	-0.165	-0.440%	52.404	0.454	0.874%	102.643	-1.057	-1.019%
contrast	1	43.46	-0.54	-1.227%	37.192	-0.348	-0.927%	51.299	-0.651	-1.253%	101.459	-2.241	-2.161%
elastic_transform	1	43.86	-0.14	-0.318%	37.049	-0.491	-1.308%	51.256	-0.694	-1.336%	100.643	-3.057	-2.948%
pixelate	1	42.6	-1.4	-3.182%	36.19	-1.35	-3.596%	51.931	-0.019	-0.037%	91.587	-12.113	-11.681%
snow	1	41.66	-2.34	-5.318%	35.697	-1.843	-4.909%	50.639	-1.311	-2.524%	89.327	-14.373	-13.860%
frost	1	42.4	-1.6	-3.636%	36.174	-1.366	-3.638%	52.031	0.081	0.156%	92.949	-10.751	-10.368%
fog	1	43.2	-0.8	-1.818%	37.24	-0.3	-0.800%	51.787	-0.163	-0.314%	99.78	-3.92	-3.780%
brightness	1	43.95	-0.05	-0.114%	37.502	-0.038	-0.101%	51.773	-0.177	-0.341%	102.852	-0.848	-0.817%
spatter	1	43.73	-0.27	-0.614%	37.542	0.002	0.005%	51.787	-0.163	-0.314%	102.319	-1.381	-1.332%
saturate	1	42.82	-1.18	-2.682%	37.605	0.065	0.174%	51.514	-0.436	-0.839%	100.085	-3.615	-3.486%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	2	42.77	-1.23	-2.795%	36.723	-0.817	-2.177%	52.275	0.325	0.626%	95.272	-8.428	-8.127%
gaussian_noise	2	43.29	-0.71	-1.614%	37.065	-0.475	-1.266%	52.131	0.181	0.349%	98.721	-4.979	-4.802%
shot_noise	2	43.1	-0.9	-2.045%	36.858	-0.682	-1.817%	52.318	0.368	0.709%	98.176	-5.524	-5.326%
speckle_noise	2	43.53	-0.47	-1.068%	37.081	-0.459	-1.224%	52.131	0.181	0.349%	99.913	-3.787	-3.652%
zoom_blur	2	40.21	-3.79	-8.614%	34.417	-3.123	-8.318%	51.844	-0.106	-0.203%	67.813	-35.887	-34.607%
defocus_blur	2	43.38	-0.62	-1.409%	36.834	-0.706	-1.880%	52.49	0.54	1.040%	97.478	-6.222	-6.000%
motion_blur	2	43.15	-0.85	-1.932%	36.945	-0.595	-1.584%	52.017	0.067	0.128%	96.595	-7.105	-6.851%
glass_blur	2	43.14	-0.86	-1.955%	36.683	-0.857	-2.283%	51.773	-0.177	-0.341%	96.533	-7.167	-6.911%
gaussian_blur	2	43.5	-0.5	-1.136%	36.985	-0.555	-1.478%	52.246	0.296	0.570%	98.647	-5.053	-4.872%
jpeg_compression	2	43.73	-0.27	-0.614%	37.446	-0.094	-0.250%	52.175	0.225	0.432%	101.048	-2.652	-2.558%
contrast	2	43.21	-0.79	-1.795%	36.786	-0.754	-2.007%	51.816	-0.134	-0.259%	98.812	-4.888	-4.713%
elastic_transform	2	42.63	-1.37	-3.114%	35.999	-1.541	-4.104%	51.069	-0.881	-1.695%	87.721	-15.979	-15.408%
pixelate	2	42.26	-1.74	-3.955%	36.166	-1.374	-3.659%	51.586	-0.364	-0.701%	88.7	-15.0	-14.465%
snow	2	40.73	-3.27	-7.432%	34.751	-2.789	-7.429%	50.969	-0.981	-1.889%	78.355	-25.345	-24.441%
frost	2	41.3	-2.7	-6.136%	35.689	-1.851	-4.930%	52.131	0.181	0.349%	81.882	-21.818	-21.039%
fog	2	42.97	-1.03	-2.341%	37.017	-0.523	-1.393%	51.443	-0.507	-0.977%	98.666	-5.034	-4.855%
brightness	2	43.71	-0.29	-0.659%	37.232	-0.308	-0.821%	51.758	-0.192	-0.369%	102.805	-0.895	-0.863%
spatter	2	42.4	-1.6	-3.636%	36.333	-1.207	-3.214%	51.342	-0.608	-1.170%	93.188	-10.512	-10.137%
saturate	2	41.84	-2.16	-4.909%	37.335	-0.205	-0.546%	51.615	-0.335	-0.645%	97.293	-6.407	-6.178%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	3	42.46	-1.54	-3.500%	36.667	-0.873	-2.325%	52.218	0.268	0.515%	92.925	-10.775	-10.391%
gaussian_noise	3	42.71	-1.29	-2.932%	36.437	-1.103	-2.939%	52.06	0.11	0.211%	93.189	-10.511	-10.136%
shot_noise	3	42.55	-1.45	-3.295%	36.492	-1.048	-2.791%	52.074	0.124	0.239%	93.719	-9.981	-9.625%
speckle_noise	3	42.72	-1.28	-2.909%	37.343	-0.197	-0.525%	51.931	0.019	0.037%	94.595	-9.105	-8.780%
zoom_blur	3	39.03	-4.97	-11.295%	33.71	-3.83	-10.203%	51.787	-0.163	-0.314%	56.77	-46.93	-45.256%
defocus_blur	3	42.76	-1.24	-2.818%	36.198	-1.342	-3.575%	52.203	0.253	0.487%	91.529	-12.171	-11.737%
motion_blur	3	42.64	-1.36	-3.091%	36.58	-0.96	-2.558%	51.629	-0.321	-0.618%	91.016	-12.684	-12.231%
glass_blur	3	41.27	-2.73	-6.205%	35.133	-2.407	-6.412%	51.543	-0.407	-0.783%	78.493	-25.207	-24.308%
gaussian_blur	3	42.89	-1.11	-2.523%	36.453	-1.087	-2.897%	52.175	0.225	0.432%	93.08	-10.62	-10.241%
jpeg_compression	3	43.57	-0.43	-0.977%	37.526	-0.014	-0.038%	52.117	0.167	0.322%	100.871	-2.829	-2.728%
contrast	3	42.55	-1.45	-3.295%	36.301	-1.239	-3.299%	51.256	-0.694	-1.336%	94.962	-8.738	-8.426%
elastic_transform	3	43.27	-0.73	-1.659%	36.604	-0.936	-2.494%	52.16	0.21	0.405%	97.619	-6.081	-5.864%
pixelate	3	41.63	-2.37	-5.386%	35.149	-2.391	-6.370%	50.409	-1.541	-2.966%	79.369	-24.331	-23.463%
snow	3	39.84	-4.16	-9.455%	34.536	-3.004	-8.001%	50.926	-1.024	-1.972%	70.721	-32.979	-31.802%
frost	3	40.14	-3.86	-8.773%	34.775	-2.765	-7.365%	51.428	-0.522	-1.005%	74.116	-29.584	-28.529%
fog	3	42.5	-1.5	-3.409%	36.619	-0.921	-2.452%	51.299	-0.651	-1.253%	95.292	-8.408	-8.108%
brightness	3	43.24	-0.76	-1.727%	36.826	-0.714	-1.901%	51.787	-0.163	-0.314%	100.519	-3.181	-3.067%
spatter	3	41.72	-2.28	-5.182%	35.817	-1.723	-4.591%	51.629	-0.321	-0.618%	87.11	-16.59	-15.998%
saturate	3	43.73	-0.27	-0.614%	37.502	-0.038	-0.101%	51.931	-0.019	-0.037%	102.193	-1.507	-1.453%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	4	41.7	-2.3	-5.227%	35.832	-1.708	-4.549%	51.313	-0.637	-1.226%	85.122	-18.578	-17.915%
gaussian_noise	4	41.95	-2.05	-4.659%	36.262	-1.278	-3.405%	51.155	-0.795	-1.529%	85.157	-18.543	-17.881%
shot_noise	4	41.82	-2.18	-4.955%	36.286	-1.254	-3.342%	51.385	-0.565	-1.087%	83.743	-19.957	-19.245%
speckle_noise	4	42.23	-1.77	-4.023%	36.874	-0.666	-1.774%	51.486	-0.464	-0.894%	90.264	-13.346	-12.957%
zoom_blur	4	38.31	-5.69	-12.932%	32.97	-4.57	-12.173%	51.773	-0.177	-0.341%	48.834	-54.866	-52.908%
defocus_blur	4	42.18	-1.82	-4.136%	35.817	-1.723	-4.591%	52.146	0.196	0.377%	85.495	-18.205	-17.555%
motion_blur	4	41.64	-2.36	-5.364%	35.3	-2.24	-5.968%	51.816	-0.134	-0.259%	79.89	-23.81	-22.961%
glass_blur	4	40.7	-3.3	-7.500%	34.449	-3.091	-8.234%	51.012	-0.938	-1.806%	69.33	-34.37	-33.144%
gaussian_blur	4	42.18	-1.82	-4.136%	35.999	-1.541	-4.104%	52.505	0.555	1.068%	87.297	-16.403	-15.818%
jpeg_compression	4	42.99	-1.01	-2.295%	36.763	-0.777	-2.071%	51.859	-0.091	-0.176%	97.132	-6.568	-6.334%
contrast	4	41.05	-2.95	-6.705%	35.61	-1.93	-5.142%	49.691	-2.259	-4.348%	82.68	-21.02	-20.270%
elastic_transform	4	42.7	-1.3	-2.955%	35.673	-1.867	-4.972%	52.706	0.756	1.454%	89.234	-14.466	-13.949%
pixelate	4	40.2	-3.8	-8.636%	34.147	-3.393	-9.039%	50.165	-1.785	-3.436%	67.483	-39.217	-37.818%
snow	4	38.84	-5.16	-11.727%	33.686	-3.854	-10.267%	50.653	-1.297	-2.496%	54.262	-46.438	-44.781%
frost	4	39.96	-4.04	-9.182%	34.552	-2.988	-7.958%	52.677	0.727	1.399%	69.632	-34.068	-32.852%
fog	4	42.01	-1.99	-4.523%	35.92	-1.62	-4.316%	51.629	-0.321	-0.618%	90.375	-13.325	-12.849%
brightness	4	42.89	-1.11	-2.523%	36.699	-0.841	-2.240%	51.443	-0.507	-0.977%	98.275	-5.425	-5.232%
spatter	4	40.86	-3.14	-7.136%	35.721	-1.819	-4.845%	52.361	0.411	0.791%	78.18	-25.52	-24.610%
saturate	4	42.56	-1.44	-3.273%	36.635	-0.905	-2.410%	51.213	-0.737	-1.419%	97.633	-6.067	-5.851%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	5	40.35	-3.65	-8.295%	35.061	-2.479	-6.603%	50.754	-1.196	-2.303%	72.487	-31.213	-30.099%
gaussian_noise	5	40.16	-3.84	-8.727%	35.554	-1.986	-5.290%	50.725	-1.225	-2.358%	72.331	-31.369	-30.250%
shot_noise	5	40.52	-3.48	-7.909%	35.18	-2.36	-6.285%	50.452	-1.498	-2.883%	75.718	-27.982	-26.983%
speckle_noise	5	41.61	-2.39	-5.432%	36.365	-1.175	-3.130%	50.581	-1.369	-2.635%	84.932	-18.768	-18.098%
zoom_blur	5	37.63											

Table 21: Performance and decrease ratio of Full Finetuning on CLIP-T5 against image corruptions given severity 1 to 5.

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	1	64.29	-2.0	-3.017%	54.19	-2.63	-4.629%	72.413	-1.647	-2.224%	106.157	-5.343	-4.791%
gaussian_noise	1	65.01	-1.28	-1.931%	54.969	-1.851	-3.258%	73.159	-0.901	-1.216%	109.054	-2.446	-2.194%
shot_noise	1	65.07	-1.22	-1.840%	54.818	-2.002	-3.524%	73.188	-0.872	-1.178%	108.978	-2.522	-2.261%
speckle_noise	1	65.05	-1.24	-1.871%	54.556	-2.264	-3.985%	73.044	-1.016	-1.371%	109.044	-2.456	-2.202%
zoom_blur	1	59.3	-6.99	-10.545%	51.375	-5.445	-9.582%	59.035	-15.025	-20.287%	84.714	-26.786	-24.023%
defocus_blur	1	65.01	-1.28	-1.931%	54.858	-1.962	-3.454%	73.475	-0.585	-0.790%	108.776	-2.724	-2.443%
motion_blur	1	64.56	-1.73	-2.610%	54.961	-1.859	-3.272%	73.016	-1.044	-1.410%	107.017	-4.483	-4.021%
glass_blur	1	65.2	-1.09	-1.644%	54.937	-1.883	-3.314%	73.26	-0.8	-1.081%	108.969	-2.531	-2.270%
gaussian_blur	1	65.83	-0.46	-0.694%	55.541	-1.279	-2.250%	74.107	0.047	0.063%	111.538	0.038	0.035%
jpeg_compression	1	65.66	-0.63	-0.950%	55.406	-1.414	-2.488%	73.776	-0.284	-0.383%	111.035	-0.465	-0.417%
contrast	1	65.1	-1.19	-1.795%	55.629	-1.191	-2.096%	73.288	-0.772	-1.042%	108.6	-2.9	-2.600%
elastic_transform	1	65.51	-0.78	-1.177%	55.192	-1.628	-2.866%	73.489	-0.571	-0.771%	109.643	-2.037	-1.827%
pixelate	1	62.9	-3.39	-5.114%	54.349	-2.471	-4.349%	71.609	-2.451	-3.309%	100.583	-10.917	-9.791%
snow	1	61.47	-4.82	-7.271%	51.693	-5.127	-9.022%	72.068	-1.992	-2.689%	98.17	-13.33	-11.955%
frost	1	62.75	-3.54	-5.340%	53.069	-3.751	-6.602%	72.269	-1.791	-2.418%	101.346	-10.154	-9.107%
fog	1	64.43	-1.86	-2.806%	55.152	-1.668	-2.936%	73.245	-0.815	-1.100%	108.376	-3.124	-2.802%
brightness	1	65.96	-0.33	-0.498%	55.184	-1.636	-2.880%	74.293	0.233	0.315%	111.749	0.249	0.223%
spatter	1	65.54	-0.75	-1.131%	55.541	-1.279	-2.250%	74.566	0.506	0.683%	110.042	-1.458	-1.308%
saturate	1	63.3	-2.99	-4.510%	54.412	-2.408	-4.237%	72.7	-1.36	-1.837%	108.141	-3.359	-3.012%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	2	63.53	-2.76	-4.164%	53.602	-3.218	-5.664%	72.499	-1.561	-2.108%	103.546	-7.954	-7.133%
gaussian_noise	2	64.59	-1.7	-2.564%	54.055	-2.765	-4.867%	72.786	-1.274	-1.720%	107.698	-3.802	-3.410%
shot_noise	2	64.2	-2.09	-3.153%	53.665	-3.155	-5.522%	72.169	-1.891	-2.554%	106.268	-5.232	-4.692%
speckle_noise	2	64.79	-1.5	-2.263%	54.468	-2.352	-4.139%	72.872	-1.188	-1.604%	107.593	-3.907	-3.504%
zoom_blur	2	56.2	-10.09	-15.221%	49.054	-7.766	-13.668%	63.944	-10.116	-13.659%	70.213	-41.287	-37.029%
defocus_blur	2	64.44	-1.85	-2.791%	54.556	-2.264	-3.985%	72.757	-1.303	-1.759%	106.958	-4.542	-4.074%
motion_blur	2	63.79	-2.5	-3.771%	54.667	-2.153	-3.789%	72.312	-1.748	-2.360%	104.51	-6.99	-6.269%
glass_blur	2	64.06	-2.23	-3.364%	54.238	-2.582	-4.545%	71.997	-2.063	-2.786%	105.223	-6.277	-5.630%
gaussian_blur	2	64.69	-1.6	-2.414%	54.754	-2.066	-3.635%	73.059	-1.001	-1.352%	108.336	-3.164	-2.837%
jpeg_compression	2	65.47	-0.82	-1.237%	55.144	-1.676	-2.950%	73.618	-0.442	-0.596%	109.517	-1.983	-1.778%
contrast	2	64.42	-1.87	-2.821%	54.969	-1.851	-3.258%	72.772	-1.288	-1.740%	106.565	-4.935	-4.426%
elastic_transform	2	62.35	-3.94	-5.944%	53.037	-3.783	-6.658%	69.757	-4.303	-5.810%	96.449	-15.051	-13.498%
pixelate	2	61.99	-4.3	-6.487%	53.586	-3.234	-5.692%	69.068	-4.992	-6.740%	98.122	-13.378	-11.998%
snow	2	58.41	-7.88	-11.887%	49.881	-6.939	-12.213%	69.284	-4.776	-6.449%	86.106	-25.394	-22.775%
frost	2	59.26	-7.03	-10.605%	50.811	-6.009	-10.576%	69.628	-4.432	-5.984%	88.499	-23.001	-20.628%
fog	2	63.61	-2.68	-4.043%	54.762	-2.058	-3.621%	69.155	-4.905	-6.624%	106.338	-5.162	-4.629%
brightness	2	65.01	-1.28	-1.931%	55.033	-1.787	-3.146%	73.475	-0.585	-0.790%	110.275	-1.225	-1.099%
spatter	2	62.33	-3.96	-5.974%	53.021	-3.799	-6.686%	72.513	-1.547	-2.088%	100.702	-10.798	-9.684%
saturate	2	60.63	-5.66	-8.538%	53.435	-3.385	-5.958%	69.987	-4.073	-5.499%	102.159	-9.341	-8.377%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	3	62.53	-3.76	-5.672%	53.236	-3.584	-6.308%	71.623	-2.437	-3.290%	101.179	-10.321	-9.257%
gaussian_noise	3	63.01	-3.28	-4.948%	52.965	-3.855	-6.784%	71.666	-2.394	-3.232%	101.83	-9.67	-8.673%
shot_noise	3	62.72	-3.57	-5.385%	53.379	-3.441	-6.056%	70.791	-3.269	-4.414%	101.888	-9.612	-8.621%
speckle_noise	3	62.82	-3.47	-5.235%	53.49	-3.33	-5.860%	71.422	-2.638	-3.561%	101.97	-9.53	-8.547%
zoom_blur	3	53.66	-12.63	-19.053%	47.567	-9.253	-16.284%	61.174	-12.886	-17.399%	56.507	-54.993	-49.321%
defocus_blur	3	62.72	-3.57	-5.385%	53.538	-3.282	-5.776%	70.848	-3.212	-4.337%	100.814	-10.686	-9.584%
motion_blur	3	62.1	-4.19	-6.321%	53.339	-3.481	-6.126%	70.705	-3.355	-4.530%	98.675	-12.825	-11.502%
glass_blur	3	59.02	-7.27	-10.967%	50.493	-6.327	-11.135%	68.939	-5.121	-6.914%	85.372	-26.128	-23.433%
gaussian_blur	3	63.15	-3.14	-4.737%	54.087	-2.733	-4.811%	71.753	-2.307	-3.116%	102.983	-8.517	-7.638%
jpeg_compression	3	64.98	-1.31	-1.976%	54.921	-1.899	-3.342%	73.662	-0.398	-0.538%	108.661	-2.839	-2.547%
contrast	3	62.82	-3.47	-5.235%	54.158	-2.662	-4.685%	71.509	-2.551	-3.445%	101.702	-9.798	-8.788%
elastic_transform	3	64.15	-2.14	-3.228%	53.808	-3.012	-5.301%	72.47	-1.59	-2.147%	104.869	-6.631	-5.947%
pixelate	3	59.64	-6.65	-10.032%	52.385	-4.435	-7.805%	67.906	-6.154	-8.310%	88.665	-22.835	-20.480%
snow	3	56.65	-9.64	-14.542%	48.831	-7.989	-14.060%	66.858	-7.202	-9.724%	78.893	-32.607	-29.244%
frost	3	56.82	-9.47	-14.286%	49.547	-7.273	-12.800%	67.447	-6.613	-8.930%	79.193	-32.307	-28.975%
fog	3	62.46	-3.83	-5.778%	54.206	-2.614	-4.601%	72.054	-2.006	-2.709%	103.031	-8.469	-7.596%
brightness	3	64.52	-1.77	-2.670%	54.961	-1.859	-3.272%	72.686	-1.374	-1.856%	108.419	-3.081	-2.763%
spatter	3	60.84	-5.45	-8.221%	52.369	-4.451	-7.833%	71.882	-2.178	-2.941%	95.642	-15.858	-14.222%
saturate	3	65.17	-1.12	-1.690%	54.953	-1.867	-3.286%	73.374	-0.686	-0.926%	110.019	-1.481	-1.328%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	4	60.13	-6.16	-9.293%	51.813	-5.007	-8.813%	69.198	-4.862	-6.565%	91.621	-19.879	-17.829%
gaussian_noise	4	60.37	-5.92	-8.930%	52.21	-4.61	-8.113%	69.887	-4.173	-5.635%	94.151	-17.349	-15.559%
shot_noise	4	59.82	-6.47	-9.760%	51.701	-5.119	-9.008%	68.451	-5.609	-7.573%	91.7	-19.8	-17.758%
speckle_noise	4	61.48	-4.81	-7.256%	53.109	-3.711	-6.532%	69.786	-4.274	-5.771%	97.774	-13.726	-12.311%
zoom_blur	4	51.58	-14.71	-22.190%	45.961	-10.859	-19.111%	59.409	-14.651	-19.783%	64.098	-65.402	-58.656%
defocus_blur	4	60.91	-5.38	-8.116%	52.759	-4.061	-7.148%	69.298	-4.762	-6.430%	93.946	-17.554	-15.744%
motion_blur	4	59.37	-6.92	-10.439%	51.59	-5.23	-9.204%	68.423	-5.637	-7.612%	87.289	-24.211	-21.713%
glass_blur	4	56.9	-9.39	-14.165%	49.73	-7.09	-12.479%	67.475	-6.585	-8.891%	78.169	-33.331	-29.893%
gaussian_blur	4	61.27	-5.02	-7.573%	52.822	-3.998	-7.036%	70.044	-4.016	-5.422%	96.796	-14.704	-13.188%
jpeg_compression	4	63.91	-2.38	-3.590%	54.19	-2.63	-4.629%	72.729	-1.331	-1.798%	104.728	-6.772	-6.073%
contrast	4	58.57	-7.72	-11.646%	51.598	-5.222	-9.190%	68.092	-5.968	-8.058%	89.528	-21.972	-19.706%
elastic_transform	4	61.91	-4.38	-6.607%	52.361	-4.459	-7.847%	71.25	-2.81	-3.794%	96.929	-14.571	-13.068%
pixelate	4	55.66	-10.63	-16.036%	49.873	-6.947	-12.227%	64.317	-9.743	-13.155%	74.119	-37.381	-33.525%
snow	4	53.52	-12.77	-19.264%	47.217	-9.603	-16.900%	63.715	-10.345	-13.969%	64.304	-47.196	-42.328%
frost	4	55.8	-10.49	-15.824%	49.165	-7.655	-13.472%	67.59	-6.47	-8.736%	76.626	-34.874	-31.277%
fog	4	60.8	-5.49	-8.282%	52.783	-4.037	-7.106%	71.781	-2.279	-3.077%	97.573	-13.927	-12.491%
brightness	4	63.48	-2.81	-4.239%	54.452	-2.368	-4.167%	71.939	-2.121	-2.864%	106.198	-5.302	-4.755%
spatter	4	58.61	-7.68	-11.585%	50.747	-6.073	-10.688%	68.839	-5.221	-7.050%	84.966	-26.534	-23.798%
saturate	4	62.25	-4.04	-6.094%	52.56	-4.26	-7.497%	71.681	-2.379	-3.213%	102.472	-9.028	-8.097%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	5	55.83	-10.46	-15.779%	50.08	-6.74	-11.863%	66.829	-7.231	-9.763%	79.113	-32.387	-29.047%
gaussian_noise	5	56.08	-10.21	-15.402%	49.849	-6.971	-12.269%	66.844	-7.216	-9.744%	79.032	-32.468	-29.119%
shot_noise	5	57.13	-9.16	-13.818%	50.405	-6.415	-11.289%	66.815	-7.245	-9.783%	82.265	-29.235	-26.220%
speckle_noise	5	59.83	-6.46	-9.745%	51.59	-5.23	-9.204%	67.963					



Table 22: Performance and decrease ratio of Hyperformer on CLIP-T5 against image corruptions given severity 1 to 5.

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	1	63.67	-1.51	-2.317%	52.878	-1.772	-3.242%	69.973	-0.587	-0.832%	105.964	-4.685	-4.234%
gaussian_noise	1	64.37	-0.81	-1.243%	52.83	-1.82	-3.30%	70.647	0.087	0.124%	108.276	-2.373	-2.145%
shot_noise	1	64.2	-0.98	-1.504%	53.323	-1.327	-2.428%	70.274	-0.286	-0.405%	109.259	-1.39	-1.257%
speckle_noise	1	64.18	-1.0	-1.534%	53.117	-1.533	-2.806%	70.102	-0.458	-0.649%	109.629	-1.02	-0.922%
zoom_blur	1	59.01	-6.17	-9.466%	50.564	-4.086	-7.476%	56.882	-13.678	-19.384%	85.215	-25.434	-22.986%
defocus_blur	1	64.12	-1.06	-1.626%	53.564	-1.104	-2.020%	70.992	0.432	0.612%	107.981	-2.668	-2.411%
motion_blur	1	63.9	-1.28	-1.964%	53.291	-1.359	-2.486%	70.26	-0.3	-0.425%	107.244	-3.405	-3.077%
glass_blur	1	64.35	-0.83	-1.273%	53.212	-1.438	-2.631%	70.705	0.145	0.205%	108.233	-2.416	-2.183%
gaussian_blur	1	64.95	-0.23	-0.353%	53.959	-0.691	-1.264%	71.135	0.575	0.815%	109.927	-0.722	-0.653%
jpeg_compression	1	64.57	-0.61	-0.936%	53.22	-1.43	-2.617%	71.021	0.461	0.653%	109.879	-0.77	-0.696%
contrast	1	63.72	-1.46	-2.240%	53.474	-1.176	-2.151%	69.93	-0.63	-0.893%	109.584	-1.065	-0.963%
elastic_transform	1	64.48	-0.7	-1.074%	53.554	-1.096	-2.006%	70.346	-0.214	-0.303%	109.275	-1.374	-1.242%
pixelate	1	62.07	-3.11	-4.771%	52.91	-1.74	-3.184%	69.011	-1.549	-2.195%	100.738	-9.911	-8.958%
snow	1	61.08	-4.1	-6.290%	50.962	-3.688	-6.748%	68.911	-1.649	-2.338%	98.052	-12.597	-11.385%
frost	1	62.19	-2.99	-4.587%	51.94	-2.71	-4.959%	69.427	-1.133	-1.605%	100.993	-9.656	-8.727%
fog	1	63.47	-1.71	-2.624%	53.665	-0.985	-1.802%	69.973	-0.587	-0.832%	108.614	-2.035	-1.839%
brightness	1	65.04	-0.14	-0.215%	53.49	-1.16	-2.122%	71.15	0.59	0.836%	110.949	0.3	0.271%
spatter	1	64.82	-0.36	-0.552%	53.768	-0.882	-1.613%	70.992	0.432	0.612%	110.218	-0.431	-0.389%
saturate	1	62.58	-2.6	-3.989%	52.663	-1.987	-3.635%	69.312	-1.248	-1.768%	107.263	-3.386	-3.060%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	2	62.92	-2.26	-3.467%	52.123	-2.527	-4.624%	69.6	-0.96	-1.361%	103.856	-6.793	-6.139%
gaussian_noise	2	63.58	-1.6	-2.455%	52.377	-2.273	-4.159%	69.958	-0.602	-0.853%	107.272	-3.377	-3.052%
shot_noise	2	63.5	-1.68	-2.577%	52.91	-1.74	-3.184%	69.556	-1.004	-1.422%	106.947	-3.702	-3.346%
speckle_noise	2	63.89	-1.29	-1.979%	52.934	-1.716	-3.141%	69.858	-0.702	-0.995%	108.21	-2.439	-2.205%
zoom_blur	2	56.0	-9.18	-14.084%	48.807	-5.843	-10.691%	61.519	-9.041	-12.814%	72.413	-38.236	-34.556%
defocus_blur	2	63.73	-1.45	-2.225%	53.125	-1.525	-2.791%	70.317	-0.243	-0.344%	106.855	-3.794	-3.429%
motion_blur	2	63.05	-2.13	-3.268%	52.862	-1.788	-3.271%	70.446	-0.114	-0.161%	104.409	-6.24	-5.639%
glass_blur	2	63.27	-1.91	-2.930%	52.457	-2.193	-4.013%	69.93	-0.63	-0.893%	104.476	-6.173	-5.579%
gaussian_blur	2	63.97	-1.21	-1.856%	53.117	-1.533	-2.806%	70.418	-0.142	-0.202%	107.399	-3.25	-2.937%
jpeg_compression	2	64.3	-0.88	-1.350%	52.981	-1.669	-3.053%	70.848	0.288	0.409%	109.921	-0.728	-0.658%
contrast	2	63.0	-2.18	-3.345%	53.14	-1.51	-2.762%	69.341	-1.219	-1.727%	107.914	-2.735	-2.472%
elastic_transform	2	61.76	-3.42	-5.247%	51.996	-2.654	-4.857%	66.614	-3.946	-5.929%	95.92	-14.729	-13.311%
pixelate	2	61.36	-3.82	-5.861%	52.353	-2.297	-4.203%	65.738	-4.822	-6.833%	98.244	-12.405	-11.211%
snow	2	58.33	-6.85	-10.509%	49.094	-5.556	-10.167%	66.37	-4.19	-5.938%	86.423	-24.226	-21.895%
frost	2	58.86	-6.32	-9.696%	49.674	-4.976	-9.105%	67.274	-3.286	-4.657%	89.41	-21.239	-19.195%
fog	2	62.72	-2.46	-3.774%	53.005	-1.645	-3.010%	66.973	-3.587	-5.084%	106.936	-3.713	-3.356%
brightness	2	64.53	-0.65	-0.997%	53.339	-1.311	-2.399%	70.346	-0.214	-0.303%	110.292	-0.357	-0.323%
spatter	2	62.05	-3.13	-4.802%	51.805	-2.845	-5.206%	69.14	-1.42	-2.012%	100.694	-9.955	-8.997%
saturate	2	60.17	-5.01	-7.686%	51.844	-2.806	-5.134%	66.93	-3.63	-5.145%	102.439	-8.21	-7.419%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	3	61.92	-3.26	-5.002%	52.115	-2.535	-4.639%	68.882	-1.678	-2.378%	101.262	-9.387	-8.484%
gaussian_noise	3	61.94	-3.24	-4.971%	52.011	-2.639	-4.828%	69.054	-1.506	-2.134%	102.599	-8.05	-7.275%
shot_noise	3	62.02	-3.16	-4.848%	52.043	-2.607	-4.770%	68.509	-2.051	-2.907%	102.533	-8.116	-7.335%
speckle_noise	3	62.41	-2.77	-4.250%	52.274	-2.376	-4.348%	68.322	-2.238	-3.172%	102.701	-7.948	-7.183%
zoom_blur	3	53.73	-11.45	-17.567%	46.748	-7.902	-14.459%	59.351	-11.209	-15.885%	59.185	-51.464	-46.511%
defocus_blur	3	62.0	-3.18	-4.879%	52.019	-2.631	-4.814%	69.097	-1.463	-2.073%	100.879	-9.77	-8.829%
motion_blur	3	61.81	-3.37	-5.170%	52.306	-2.344	-4.290%	69.212	-1.348	-1.910%	98.188	-12.461	-11.262%
glass_blur	3	58.58	-6.6	-10.126%	49.587	-5.063	-9.265%	66.801	-3.759	-5.328%	85.895	-24.754	-22.372%
gaussian_blur	3	62.6	-2.58	-3.958%	52.488	-2.162	-3.955%	69.183	-1.377	-1.951%	103.215	-7.434	-6.719%
jpeg_compression	3	64.12	-1.06	-1.626%	53.26	-1.39	-2.544%	70.418	-0.142	-0.202%	108.92	-1.729	-1.563%
contrast	3	61.76	-3.42	-5.247%	52.671	-1.979	-3.621%	68.681	-1.879	-2.663%	103.574	-7.075	-6.394%
elastic_transform	3	63.36	-1.82	-2.792%	52.735	-1.915	-3.504%	70.69	0.13	0.185%	104.436	-6.213	-5.615%
pixelate	3	59.16	-6.02	-9.236%	51.264	-3.386	-6.196%	64.877	-5.683	-8.054%	88.505	-22.144	-20.013%
snow	3	56.46	-8.72	-13.378%	48.06	-6.59	-12.058%	65.222	-5.338	-7.566%	78.153	-32.496	-29.369%
frost	3	56.49	-8.69	-13.332%	48.529	-6.121	-11.200%	65.035	-5.525	-7.830%	79.936	-30.713	-27.757%
fog	3	61.77	-3.41	-5.232%	52.552	-2.098	-3.839%	69.427	-1.133	-1.605%	102.982	-7.667	-6.929%
brightness	3	63.82	-1.36	-2.087%	53.069	-1.581	-2.893%	69.6	-0.96	-1.361%	108.212	-2.437	-2.203%
spatter	3	60.76	-4.42	-6.781%	51.208	-3.442	-6.297%	69.083	-1.477	-2.094%	94.666	-15.983	-14.445%
saturate	3	64.6	-0.58	-0.890%	53.252	-1.398	-2.559%	71.164	0.604	0.856%	110.3	-0.349	-0.316%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	4	59.55	-5.63	-8.638%	51.224	-3.426	-6.268%	67.403	-3.157	-4.474%	92.072	-18.577	-16.789%
gaussian_noise	4	59.85	-5.33	-8.177%	51.415	-3.235	-5.919%	67.533	-3.027	-4.290%	93.879	-16.77	-15.156%
shot_noise	4	59.33	-5.85	-8.975%	51.367	-3.283	-6.006%	66.643	-3.917	-5.522%	93.22	-17.429	-15.752%
speckle_noise	4	60.95	-4.23	-6.490%	51.813	-2.837	-5.192%	67.504	-3.056	-4.331%	98.685	-11.964	-10.812%
zoom_blur	4	51.84	-13.34	-20.466%	45.196	-9.134	-16.714%	57.385	-13.175	-18.672%	49.973	-60.676	-54.837%
defocus_blur	4	60.25	-4.93	-7.564%	51.513	-3.457	-6.327%	67.604	-2.956	-4.189%	93.014	-17.635	-15.938%
motion_blur	4	59.15	-6.03	-9.251%	51.336	-3.314	-6.065%	67.116	-3.444	-4.880%	87.102	-23.547	-21.281%
glass_blur	4	56.62	-8.56	-13.133%	48.434	-6.216	-11.375%	65.896	-4.664	-6.609%	79.016	-31.633	-28.589%
gaussian_blur	4	60.63	-4.55	-6.981%	51.487	-3.163	-5.788%	68.107	-2.453	-3.477%	96.555	-14.094	-12.738%
jpeg_compression	4	63.18	-2.0	-3.068%	52.322	-2.328	-4.261%	69.858	-0.702	-0.995%	105.264	-5.385	-4.866%
contrast	4	57.97	-7.21	-11.062%	50.413	-4.237	-7.752%	65.021	-5.539	-7.850%	91.237	-19.412	-17.543%
elastic_transform	4	61.35	-3.83	-5.876%	51.026	-3.624	-6.632%	69.614	-0.946	-1.341%	96.358	-14.291	-12.916%
pixelate	4	55.42	-9.76	-14.974%	49.03	-5.62	-10.284%	62.179	-8.381	-11.878%	73.902	-36.747	-33.211%
snow	4	53.26	-11.92	-18.288%	46.208	-8.442	-15.448%	62.495	-8.065	-11.431%	63.875	-46.774	-42.272%
frost	4	55.76	-9.42	-14.452%	48.362	-6.288	-11.506%	65.25	-5.31	-7.525%	76.488	-34.611	-30.873%
fog	4	60.5	-4.68	-7.180%	51.606	-3.044	-5.570%	68.824	-1.736	-2.460%	97.94	-12.709	-11.486%
brightness	4	63.16	-2.02	-3.099%	52.973	-1.677	-3.068%	68.738	-1.822	-2.582%	106.695	-3.954	-3.574%
spatter	4	58.4	-6.78	-10.402%	49.046	-5.604	-10.254%	66.901	-3.659	-5.186%	86.086	-24.563	-22.199%
saturate	4	61.91	-3.27	-5.017%	52.234	-2.416	-4.421%	69.528	-1.032	-1.463%	103.832	-6.817	-6.161%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	5	55.6	-9.58	-14.698%	49.539	-5.111	-9.352%	65.222	-5.338	-7.566%	79.968	-30.681	-27.728%
gaussian_noise	5	55.48	-9.7	-14.882%	49.292	-5.358	-9.803%	65.05	-5.51	-7.810%	79.361	-31.288	-28.277%
shot_noise	5	56.43	-8.75	-13.424%	49.491	-5.159	-9.440%	64.863	-5.697	-8.074%	83.399	-27.25	-24.627%
speckle_noise	5	59.19	-5.99	-9.190%	50.787	-3.863	-7.068%	65.997	-4.563	-6.467%	92.835	-17.814	-16.0

Table 23: Performance and decrease ratio of Multiple Adapters on CLIP-T5 against image corruptions given severity 1 to 5.

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	1	64.5	-1.65	-2.494%	53.18	-2.48	-4.455%	51.801	-0.139	-0.267%	106.036	-6.113	-5.450%
gaussian_noise	1	65.19	-0.96	-1.451%	53.315	-2.345	-4.213%	51.529	-0.411	-0.792%	108.756	-3.393	-3.026%
shot_noise	1	65.05	-1.1	-1.663%	53.776	-1.884	-3.384%	51.414	-0.526	-1.013%	108.849	-3.3	-2.943%
speckle_noise	1	65.12	-1.03	-1.557%	53.458	-2.202	-3.955%	51.988	0.048	0.092%	109.065	-3.084	-2.750%
zoom_blur	1	59.62	-6.53	-9.872%	49.857	-5.803	-10.426%	49.792	-2.148	-4.136%	82.202	-29.947	-26.703%
defocus_blur	1	65.27	-0.88	-1.330%	53.514	-2.146	-3.855%	51.342	-0.598	-1.151%	108.326	-3.823	-3.409%
motion_blur	1	64.86	-1.29	-1.950%	53.222	-2.44	-4.384%	51.399	-0.541	-1.041%	107.751	-4.398	-3.922%
glass_blur	1	65.28	-0.87	-1.315%	53.816	-1.844	-3.313%	51.873	-0.067	-0.129%	108.701	-3.448	-3.074%
gaussian_blur	1	65.86	-0.29	-0.438%	54.055	-1.605	-2.884%	51.328	-0.612	-1.179%	110.904	-1.245	-1.111%
jpeg_compression	1	65.69	-0.46	-0.695%	53.729	-1.931	-3.470%	52.131	0.191	0.369%	109.975	-2.174	-1.938%
contrast	1	64.86	-1.29	-1.950%	53.657	-2.003	-3.598%	51.313	-0.627	-1.207%	109.128	-3.021	-2.694%
elastic_transform	1	65.38	-0.77	-1.164%	53.721	-1.939	-3.484%	52.175	0.235	0.452%	109.828	-2.321	-2.070%
pixelate	1	62.76	-3.39	-5.125%	52.663	-2.997	-5.384%	51.299	-0.641	-1.234%	99.602	-12.547	-11.187%
snow	1	61.59	-4.56	-6.893%	50.564	-5.096	-9.155%	51.457	-0.483	-0.930%	96.957	-15.192	-13.547%
frost	1	62.46	-3.69	-5.578%	51.781	-3.879	-6.969%	51.342	-0.598	-1.151%	100.831	-11.318	-10.092%
fog	1	64.35	-1.8	-2.721%	53.506	-2.154	-3.870%	51.012	-0.928	-1.787%	107.446	-4.703	-4.194%
brightness	1	65.85	-0.3	-0.454%	53.641	-2.019	-3.627%	52.203	0.263	0.507%	111.572	-0.577	-0.515%
spatter	1	65.64	-0.51	-0.771%	53.57	-2.09	-3.755%	52.347	0.407	0.783%	110.657	-1.492	-1.331%
saturate	1	63.49	-2.66	-4.021%	52.695	-2.965	-5.327%	51.701	-0.239	-0.460%	107.388	-4.761	-4.245%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	2	63.51	-2.64	-3.991%	52.759	-2.901	-5.212%	51.902	-0.038	-0.074%	103.427	-8.722	-7.777%
gaussian_noise	2	64.45	-1.7	-2.570%	53.077	-2.583	-4.641%	51.773	-0.167	-0.322%	107.49	-4.659	-4.155%
shot_noise	2	64.27	-1.88	-2.842%	53.244	-2.416	-4.341%	51.328	-0.612	-1.179%	106.21	-5.939	-5.296%
speckle_noise	2	64.6	-1.55	-2.343%	53.506	-2.154	-3.870%	51.6	-0.34	-0.654%	108.274	-3.875	-3.455%
zoom_blur	2	56.66	-9.49	-14.346%	48.06	-7.6	-13.654%	50.194	-1.746	-3.362%	66.462	-45.687	-40.738%
defocus_blur	2	64.48	-1.67	-2.525%	52.942	-2.718	-4.884%	51.457	-0.483	-0.930%	106.226	-5.923	-5.281%
motion_blur	2	63.68	-2.47	-3.734%	52.536	-3.124	-5.612%	52.16	0.22	0.424%	104.258	-7.891	-7.037%
glass_blur	2	64.13	-2.02	-3.054%	53.212	-2.448	-4.398%	51.801	-0.139	-0.267%	104.629	-7.52	-6.706%
gaussian_blur	2	64.83	-1.32	-1.995%	53.125	-2.535	-4.555%	51.342	-0.598	-1.151%	107.206	-4.943	-4.408%
jpeg_compression	2	65.49	-0.66	-0.998%	53.872	-1.788	-3.213%	53.021	1.081	2.082%	109.446	-2.703	-2.410%
contrast	2	63.95	-2.2	-3.326%	53.371	-2.289	-4.113%	50.696	-1.244	-2.395%	106.845	-5.304	-4.729%
elastic_transform	2	62.82	-3.33	-5.034%	51.678	-3.982	-7.155%	51.084	-0.856	-1.649%	94.903	-17.246	-15.378%
pixelate	2	62.26	-3.89	-5.881%	52.337	-3.323	-5.969%	51.5	-0.44	-0.847%	97.551	-14.598	-13.017%
snow	2	58.42	-7.73	-11.686%	48.911	-6.749	-12.126%	50.71	-1.23	-2.367%	84.361	-27.788	-24.778%
frost	2	59.3	-6.85	-10.355%	49.666	-5.994	-10.769%	51.213	-0.727	-1.400%	87.72	-24.429	-21.783%
fog	2	63.61	-2.54	-3.840%	53.244	-2.416	-4.341%	50.423	-1.517	-2.920%	106.212	-5.937	-5.294%
brightness	2	65.43	-0.72	-1.088%	53.482	-2.178	-3.913%	52.619	0.679	1.308%	110.536	-1.613	-1.438%
spatter	2	62.4	-3.75	-5.669%	52.306	-3.354	-6.027%	52.634	0.694	1.336%	99.537	-12.612	-11.246%
saturate	2	60.8	-5.35	-8.088%	52.043	-3.617	-6.498%	50.782	-1.158	-2.229%	102.179	-9.97	-8.890%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	3	62.57	-3.58	-5.412%	53.037	-2.623	-4.712%	51.342	-0.598	-1.151%	100.779	-11.37	-10.138%
gaussian_noise	3	62.63	-3.52	-5.321%	52.767	-2.893	-5.198%	51.098	-0.842	-1.621%	101.76	-10.389	-9.264%
shot_noise	3	62.71	-3.44	-5.200%	53.236	-2.424	-4.355%	50.667	-1.273	-2.450%	101.794	-10.355	-9.233%
speckle_noise	3	62.7	-3.45	-5.215%	52.981	-2.679	-4.812%	50.596	-1.344	-2.588%	102.21	-9.939	-8.863%
zoom_blur	3	53.95	-12.2	-18.443%	46.931	-8.729	-15.682%	50.179	-1.761	-3.390%	51.885	-60.264	-53.736%
defocus_blur	3	62.69	-3.46	-5.231%	52.139	-3.521	-6.327%	51.414	-0.526	-1.013%	100.687	-11.462	-10.220%
motion_blur	3	62.11	-4.04	-6.107%	52.226	-3.434	-6.169%	51.069	-0.871	-1.676%	98.529	-13.62	-12.145%
glass_blur	3	58.93	-7.22	-10.915%	49.634	-6.026	-10.826%	50.682	-1.258	-2.422%	84.772	-27.377	-24.412%
gaussian_blur	3	63.51	-2.64	-3.991%	52.274	-3.386	-6.084%	51.084	-0.856	-1.649%	101.916	-10.233	-9.125%
jpeg_compression	3	65.16	-0.99	-1.497%	53.848	-1.812	-3.256%	52.663	0.723	1.391%	109.852	-2.297	-2.048%
contrast	3	62.71	-3.44	-5.200%	52.568	-3.092	-5.555%	50.208	-1.732	-3.334%	103.41	-8.739	-7.792%
elastic_transform	3	64.32	-1.83	-2.766%	52.878	-2.782	-4.998%	51.514	-0.426	-0.820%	104.531	-7.618	-6.793%
pixelate	3	60.13	-6.02	-9.101%	51.526	-4.134	-7.426%	50.782	-1.158	-2.229%	87.638	-24.511	-21.855%
snow	3	56.64	-9.51	-14.376%	47.941	-7.719	-13.868%	50.022	-1.918	-3.694%	76.498	-35.651	-31.789%
frost	3	57.14	-9.01	-13.621%	48.625	-7.035	-12.640%	51.256	-0.684	-1.317%	76.995	-35.154	-31.346%
fog	3	62.53	-3.62	-5.472%	52.862	-2.798	-5.027%	50.926	-1.014	-1.953%	102.556	-9.593	-8.554%
brightness	3	64.65	-1.5	-2.268%	53.395	-2.265	-4.070%	52.505	0.565	1.087%	108.24	-3.909	-3.486%
spatter	3	61.0	-5.15	-7.785%	51.256	-4.404	-7.912%	52.548	0.608	1.170%	93.794	-18.355	-16.366%
saturate	3	65.26	-0.89	-1.345%	53.156	-2.504	-4.498%	52.878	0.938	1.806%	110.132	-2.017	-1.799%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	4	59.82	-6.33	-9.569%	51.757	-3.903	-7.012%	50.553	-1.387	-2.671%	91.794	-20.355	-18.150%
gaussian_noise	4	60.12	-6.03	-9.116%	51.455	-4.205	-7.555%	51.17	-0.77	-1.483%	93.233	-18.916	-16.867%
shot_noise	4	59.75	-6.4	-9.675%	51.193	-4.467	-8.026%	50.825	-1.115	-2.146%	90.816	-21.333	-19.022%
speckle_noise	4	61.49	-4.66	-7.045%	52.369	-3.291	-5.912%	50.61	-1.33	-2.561%	98.103	-14.046	-12.524%
zoom_blur	4	52.17	-13.98	-21.134%	45.254	-10.406	-18.696%	49.892	-2.048	-3.942%	42.244	-69.905	-62.333%
defocus_blur	4	60.84	-5.31	-8.027%	51.034	-4.626	-8.312%	50.754	-1.186	-2.284%	93.41	-18.739	-16.709%
motion_blur	4	59.58	-6.57	-9.932%	50.294	-5.366	-9.640%	50.452	-1.488	-2.865%	85.262	-26.887	-23.975%
glass_blur	4	56.72	-9.43	-14.255%	48.434	-7.226	-12.983%	50.481	-1.459	-2.809%	75.714	-36.435	-32.488%
gaussian_blur	4	61.6	-4.55	-6.878%	51.288	-4.372	-7.855%	50.754	-1.186	-2.284%	96.23	-15.919	-14.194%
jpeg_compression	4	64.15	-2.0	-3.023%	53.132	-2.528	-4.541%	52.332	0.392	0.756%	104.967	-7.182	-6.404%
contrast	4	58.4	-7.75	-11.716%	50.668	-4.992	-8.969%	50.179	-1.761	-3.390%	88.829	-23.32	-20.794%
elastic_transform	4	62.01	-4.14	-6.259%	51.344	-4.316	-7.755%	51.285	-0.655	-1.262%	95.188	-16.961	-15.124%
pixelate	4	55.87	-10.28	-15.540%	48.72	-6.94	-12.469%	50.309	-1.631	-3.141%	72.813	-39.336	-35.075%
snow	4	53.57	-12.58	-19.017%	46.049	-6.911	-17.268%	49.878	-2.062	-3.970%	61.826	-50.323	-44.871%
frost	4	56.21	-9.94	-15.026%	47.925	-7.735	-13.897%	51.543	-0.397	-0.764%	75.086	-37.063	-33.048%
fog	4	60.89	-5.26	-7.952%	51.352	-4.308	-7.741%	51.141	-0.799	-1.538%	96.996	-15.153	-13.511%
brightness	4	63.58	-2.57	-3.885%	53.252	-2.408	-4.327%	52.849	0.909	1.750%	105.744	-6.405	-5.711%
spatter	4	58.63	-7.52	-11.368%	49.674	-5.986	-10.755%	52.261	0.321	0.617%	83.306	-28.843	-25.718%
saturate	4	62.69	-3.46	-5.231%	51.932	-3.728	-6.698%	51.844	-0.096	-0.184%	103.63	-8.519	-7.596%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	5	56.02	-10.13	-15.314%	49.412	-6.248	-11.226%	50.007	-1.933	-3.721%	79.067	-33.082	-29.499%
gaussian_noise	5	56.02	-10.13	-15.314%	49.507	-6.153	-11.054%	50.409	-1.531	-2.947%	78.336	-33.813	-30.150%
shot_noise	5	57.09	-9.06	-13.696%	49.905	-5.755	-10.340%	49.806	-2.134	-4.108%	82.044	-30.105	-26.844%
speckle_noise	5	59.79	-6.36	-9.615%	51.511	-4.149	-7.455%	50.538	-1.4				

Table 24: Performance and decrease ratio of Multiple Compacters on CLIP-T5 against image corruptions given severity 1 to 5.

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	1	63.83	-1.67	-2.550%	52.027	-2.653	-4.851%	52.131	-0.499	-0.947%	106.519	-6.681	-5.902%
gaussian_noise	1	64.54	-0.96	-1.466%	52.552	-2.128	-3.892%	52.591	-0.039	-0.075%	109.611	-3.589	-3.171%
shot_noise	1	64.48	-1.02	-1.557%	52.441	-2.239	-4.095%	52.318	-0.312	-0.593%	109.51	-3.69	-3.259%
speckle_noise	1	64.25	-1.25	-1.908%	52.441	-2.239	-4.095%	52.002	-0.628	-1.193%	110.284	-2.916	-2.576%
zoom_blur	1	58.87	-6.63	-10.122%	49.73	-4.95	-9.053%	49.347	-3.283	-6.238%	84.89	-28.31	-25.009%
defocus_blur	1	64.57	-0.93	-1.420%	53.101	-1.579	-2.888%	51.988	-0.642	-1.220%	109.512	-3.688	-3.258%
motion_blur	1	64.0	-1.5	-2.290%	52.806	-1.874	-3.426%	52.232	-0.398	-0.756%	108.307	-4.893	-4.322%
glass_blur	1	64.57	-0.93	-1.420%	52.759	-1.921	-3.514%	51.931	-0.699	-1.329%	108.766	-4.434	-3.917%
gaussian_blur	1	64.93	-0.57	-0.870%	53.323	-1.357	-2.481%	52.002	-0.628	-1.193%	112.114	-1.086	-0.960%
jpeg_compression	1	65.01	-0.49	-0.748%	53.156	-1.524	-2.787%	52.304	-0.326	-0.620%	111.194	-2.006	-1.772%
contrast	1	64.1	-1.4	-2.137%	53.101	-1.579	-2.888%	52.045	-0.585	-1.111%	109.412	-3.788	-3.346%
elastic_transform	1	64.83	-0.67	-1.023%	53.252	-1.428	-2.612%	52.505	-0.125	-0.238%	109.741	-3.459	-3.056%
pixelate	1	62.37	-3.13	-4.779%	51.908	-2.772	-5.069%	51.572	-1.058	-2.011%	100.87	-12.33	-10.892%
snow	1	60.82	-4.68	-7.145%	50.644	-4.036	-7.381%	51.026	-1.604	-3.047%	96.456	-16.744	-14.792%
frost	1	62.08	-3.42	-5.221%	50.811	-3.869	-7.076%	51.715	-0.915	-1.738%	101.172	-12.028	-10.626%
fog	1	63.61	-1.89	-2.885%	53.101	-1.579	-2.888%	51.041	-1.589	-3.020%	109.137	-4.063	-3.590%
brightness	1	65.15	-0.35	-0.534%	53.061	-1.619	-2.961%	53.208	0.578	1.098%	111.696	-1.504	-1.329%
spatter	1	64.88	-0.62	-0.947%	53.029	-1.651	-3.019%	53.151	0.521	0.989%	111.11	-2.09	-1.847%
saturate	1	62.75	-2.75	-4.198%	52.735	-1.945	-3.557%	52.332	-0.298	-0.565%	107.965	-5.235	-4.624%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	2	62.82	-2.68	-4.092%	51.98	-2.7	-4.938%	51.414	-1.216	-2.311%	103.863	-9.337	-8.248%
gaussian_noise	2	63.86	-1.64	-2.504%	52.298	-2.382	-4.357%	52.203	-0.427	-0.811%	107.057	-6.143	-5.427%
shot_noise	2	63.57	-1.93	-2.947%	52.139	-2.541	-4.648%	51.529	-1.101	-2.093%	107.056	-6.144	-5.427%
speckle_noise	2	64.04	-1.46	-2.229%	52.306	-2.374	-4.342%	51.744	-0.886	-1.684%	108.473	-4.727	-4.176%
zoom_blur	2	56.43	-9.07	-13.847%	47.822	-6.858	-12.543%	50.079	-2.551	-4.847%	70.125	-43.075	-38.052%
defocus_blur	2	63.95	-1.55	-2.366%	52.616	-2.064	-3.775%	51.83	-0.8	-1.520%	107.444	-5.756	-5.085%
motion_blur	2	63.53	-1.97	-3.008%	52.663	-2.017	-3.688%	51.715	-0.915	-1.738%	105.411	-7.789	-6.881%
glass_blur	2	63.33	-2.17	-3.313%	52.155	-2.525	-4.619%	51.227	-1.403	-2.665%	104.253	-8.947	-7.904%
gaussian_blur	2	64.19	-1.31	-2.000%	52.83	-1.85	-3.383%	51.974	-0.656	-1.247%	108.266	-4.934	-4.359%
jpeg_compression	2	64.85	-0.65	-0.992%	52.902	-1.778	-3.252%	52.591	-0.039	-0.075%	110.117	-3.083	-2.723%
contrast	2	63.29	-2.21	-3.374%	52.735	-1.945	-3.557%	51.199	-1.431	-2.720%	107.708	-5.492	-4.852%
elastic_transform	2	62.2	-3.3	-5.038%	51.344	-3.336	-6.102%	51.184	-1.446	-2.747%	95.894	-17.306	-15.288%
pixelate	2	61.61	-3.89	-5.939%	51.272	-3.408	-6.233%	50.94	-1.69	-3.211%	97.593	-15.607	-13.787%
snow	2	57.96	-7.54	-11.511%	48.784	-5.896	-10.783%	50.108	-2.522	-4.793%	85.904	-27.296	-24.113%
frost	2	59.01	-6.49	-9.908%	49.372	-5.308	-9.708%	50.696	-1.934	-3.674%	89.042	-24.158	-21.341%
fog	2	62.92	-2.58	-3.939%	52.655	-2.025	-3.703%	50.983	-1.647	-3.129%	107.793	-5.407	-4.777%
brightness	2	64.53	-0.97	-1.481%	52.465	-2.215	-4.052%	53.179	0.549	1.044%	110.353	-2.847	-2.515%
spatter	2	61.78	-3.72	-5.679%	51.439	-3.241	-5.927%	52.749	0.119	0.225%	100.432	-12.768	-11.279%
saturate	2	60.44	-5.06	-7.725%	51.892	-2.788	-5.098%	51.557	-1.073	-2.038%	103.452	-9.748	-8.611%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	3	62.09	-3.41	-5.206%	51.137	-3.543	-6.480%	51.17	-1.46	-2.774%	100.455	-12.745	-11.259%
gaussian_noise	3	62.37	-3.13	-4.779%	51.654	-3.026	-5.535%	51.658	-0.972	-1.847%	102.564	-10.636	-9.395%
shot_noise	3	62.27	-3.23	-4.931%	51.526	-3.154	-5.767%	50.782	-1.848	-3.511%	102.932	-10.268	-9.071%
speckle_noise	3	62.49	-3.01	-4.595%	51.924	-2.756	-5.040%	50.71	-1.92	-3.647%	102.737	-10.463	-9.243%
zoom_blur	3	54.03	-11.47	-17.511%	45.858	-8.822	-16.134%	49.691	-2.939	-5.584%	56.409	-56.791	-50.168%
defocus_blur	3	62.26	-3.24	-4.947%	51.725	-2.955	-5.404%	51.055	-1.575	-2.993%	100.32	-12.88	-11.378%
motion_blur	3	61.78	-3.72	-5.679%	51.789	-2.891	-5.287%	50.911	-1.719	-3.265%	98.305	-14.895	-13.159%
glass_blur	3	58.83	-6.67	-10.183%	48.489	-6.191	-11.321%	49.734	-2.896	-5.502%	84.446	-28.754	-25.401%
gaussian_blur	3	62.87	-2.63	-4.015%	51.844	-2.836	-5.186%	51.457	-1.173	-2.229%	103.333	-9.867	-8.716%
jpeg_compression	3	64.4	-1.1	-1.679%	52.95	-1.73	-3.165%	52.175	-0.455	-0.865%	109.433	-3.767	-3.328%
contrast	3	61.94	-3.56	-5.435%	51.495	-3.185	-5.825%	50.352	-2.278	-4.329%	104.423	-8.777	-7.754%
elastic_transform	3	63.49	-2.01	-3.069%	52.107	-2.573	-4.706%	52.49	-0.14	-0.265%	103.717	-9.483	-8.377%
pixelate	3	59.55	-5.95	-9.084%	49.817	-4.863	-8.893%	49.935	-2.695	-5.120%	87.769	-25.431	-22.466%
snow	3	56.35	-9.15	-13.969%	47.686	-6.994	-12.790%	49.691	-2.939	-5.584%	77.513	-35.687	-31.526%
frost	3	56.35	-9.15	-13.969%	48.672	-6.008	-10.987%	50.093	-2.537	-4.820%	79.424	-33.776	-29.837%
fog	3	61.76	-3.74	-5.710%	51.654	-3.026	-5.535%	50.94	-1.69	-3.211%	103.583	-9.617	-8.496%
brightness	3	64.06	-1.44	-2.198%	52.314	-2.366	-4.328%	53.021	0.391	0.744%	108.785	-4.415	-3.900%
spatter	3	60.43	-5.07	-7.740%	50.882	-3.798	-6.945%	51.73	-0.9	-1.711%	94.514	-18.686	-16.507%
saturate	3	64.72	-0.78	-1.191%	52.52	-2.16	-3.950%	52.261	-0.369	-0.702%	110.6	-2.6	-2.297%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	4	59.65	-5.85	-8.931%	50.016	-4.664	-8.530%	50.151	-2.479	-4.711%	92.61	-20.50	-18.189%
gaussian_noise	4	59.74	-5.76	-8.794%	50.843	-3.837	-7.018%	50.208	-2.422	-4.602%	94.23	-18.97	-16.758%
shot_noise	4	59.27	-6.23	-9.511%	50.867	-3.813	-6.974%	49.993	-2.637	-5.011%	92.355	-20.845	-18.414%
speckle_noise	4	60.83	-4.67	-7.130%	50.914	-3.766	-6.887%	50.538	-2.092	-3.974%	99.668	-14.132	-12.484%
zoom_blur	4	52.06	-13.44	-20.519%	44.959	-9.721	-17.777%	49.318	-3.312	-6.293%	47.284	-65.916	-58.230%
defocus_blur	4	60.7	-4.8	-7.328%	51.034	-3.646	-6.669%	50.538	-2.092	-3.974%	93.104	-20.096	-17.752%
motion_blur	4	59.24	-6.26	-9.557%	50.517	-4.163	-7.614%	50.022	-2.608	-4.956%	86.707	-26.493	-23.403%
glass_blur	4	56.94	-8.56	-13.069%	47.853	-6.827	-12.485%	49.577	-3.053	-5.802%	76.664	-36.536	-32.276%
gaussian_blur	4	61.12	-4.38	-6.687%	51.105	-3.575	-6.538%	50.639	-1.991	-3.784%	96.619	-16.581	-14.647%
jpeg_compression	4	63.32	-2.18	-3.328%	52.003	-2.677	-4.895%	52.074	-0.556	-1.056%	104.365	-8.835	-7.804%
contrast	4	58.13	-7.37	-11.252%	50.358	-4.322	-7.905%	49.304	-3.326	-6.320%	90.908	-22.292	-19.693%
elastic_transform	4	61.39	-4.11	-6.275%	50.747	-3.933	-7.192%	52.074	-0.556	-1.056%	95.498	-17.702	-15.638%
pixelate	4	55.72	-9.78	-14.931%	47.814	-6.866	-12.557%	49.333	-3.297	-6.265%	72.144	-41.056	-36.269%
snow	4	52.95	-12.55	-19.160%	45.858	-8.822	-16.134%	49.132	-3.498	-6.647%	63.946	-49.254	-43.510%
frost	4	55.42	-10.08	-15.389%	47.726	-6.954	-12.717%	49.821	-2.809	-5.338%	75.2	-38.0	-33.568%
fog	4	59.96	-5.54	-8.458%	51.487	-3.193	-5.840%	50.51	-2.12	-4.029%	98.914	-14.286	-12.620%
brightness	4	63.05	-2.45	-3.740%	52.163	-2.517	-4.604%	52.476	-0.154	-0.293%	105.655	-7.545	-6.666%
spatter	4	58.47	-7.03	-10.733%	49.483	-5.197	-9.504%	51.543	-1.087	-2.065%	84.696	-28.504	-25.181%
saturate	4	61.92	-3.58	-5.466%	50.97	-3.71	-6.785%	51.658	-0.972	-1.847%	103.23	-9.97	-8.808%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	5	55.86	-9.64	-14.718%	48.704	-5.976	-10.929%	49.447	-3.183	-6.047%	79.686	-33.514	-29.606%
gaussian_noise	5	55.9	-9.6	-14.656%	48.545	-6.135	-11.220%	49.218	-3.412	-6.483%	79.894	-33.306	-29.422%
shot_noise	5	56.64	-8.86	-13.527%	49.141	-5.539	-10.129%	49.39	-3.24	-6.156%	83.068	-30.132	-26.618%
speckle_noise	5	59.3	-6.2	-9.466%	50.31	-4.37	-7.992%	49.677	-2.953	-5.611%	9		

Table 25: Performance and decrease ratio of Single Adapter on CLIP-T5 against image corruptions given severity 1 to 5.

corruption	severity	VQA				GQA				NLVR				Caption			
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio	
impulse_noise	1	64.39	-2.02	-3.042%	48.179	-7.721	-13.812%	71.695	-1.085	-1.491%	106.315	-5.385	-4.821%				
gaussian_noise	1	65.09	-1.32	-1.988%	48.72	-7.18	-12.844%	72.04	-0.74	-1.017%	108.347	-3.353	-3.002%				
shot_noise	1	65.2	-1.21	-1.822%	48.776	-7.124	-12.745%	71.81	-0.97	-1.333%	108.413	-3.287	-2.942%				
speckle_noise	1	65.06	-1.35	-2.033%	48.943	-6.957	-12.446%	71.523	-1.257	-1.727%	108.565	-3.135	-2.807%				
zoom_blur	1	59.35	-7.06	-10.631%	45.54	-10.36	-18.533%	56.064	-16.716	-22.967%	84.143	-27.557	-24.670%				
defocus_blur	1	65.11	-1.3	-1.958%	48.863	-7.037	-12.588%	72.241	-0.539	-0.741%	108.171	-3.529	-3.159%				
motion_blur	1	64.88	-1.53	-2.304%	49.022	-6.878	-12.304%	71.781	-0.999	-1.372%	107.027	-4.673	-4.184%				
glass_blur	1	65.3	-1.11	-1.671%	48.895	-7.005	-12.531%	71.523	-1.257	-1.727%	108.394	-3.306	-2.960%				
gaussian_blur	1	65.94	-0.47	-0.708%	49.38	-6.52	-11.664%	72.686	-0.094	-0.130%	110.921	-0.779	-0.698%				
jpeg_compression	1	65.75	-0.66	-0.994%	49.046	-6.854	-12.261%	72.772	-0.008	-0.011%	110.994	-1.606	-1.437%				
contrast	1	65.07	-1.34	-2.018%	49.308	-6.592	-11.792%	71.638	-1.142	-1.569%	108.489	-3.211	-2.874%				
elastic_transform	1	66.04	-0.37	-0.557%	48.831	-7.069	-12.645%	72.04	-0.74	-1.017%	109.629	-2.071	-1.854%				
pixelate	1	62.97	-3.44	-5.180%	48.259	-7.641	-13.669%	69.628	-3.152	-4.331%	100.7	-1.10	-0.848%				
snow	1	61.89	-4.52	-6.806%	46.613	-9.287	-16.613%	69.614	-3.166	-4.350%	97.265	-14.435	-12.923%				
frost	1	62.91	-3.5	-5.270%	47.631	-8.269	-14.793%	70.073	-2.707	-3.719%	100.419	-11.281	-10.100%				
fog	1	64.64	-1.77	-2.665%	49.197	-6.703	-11.991%	71.308	-1.472	-2.023%	106.947	-4.753	-4.255%				
brightness	1	66.13	-0.28	-0.422%	49.865	-6.035	-10.796%	72.585	-0.195	-0.268%	111.78	0.08	0.072%				
spatter	1	65.88	-0.53	-0.798%	49.348	-6.552	-11.721%	72.528	-0.252	-0.347%	110.277	-1.423	-1.274%				
saturate	1	63.58	-2.83	-4.261%	48.752	-7.148	-12.787%	70.848	-1.932	-2.654%	106.852	-4.848	-4.340%				
impulse_noise	2	63.59	-2.82	-4.246%	47.718	-8.182	-14.636%	71.035	-1.745	-2.398%	103.652	-8.048	-7.205%				
gaussian_noise	2	64.4	-2.01	-3.027%	48.195	-7.705	-13.783%	71.595	-1.185	-1.629%	106.963	-4.737	-4.241%				
shot_noise	2	64.18	-2.23	-3.358%	48.06	-7.84	-14.025%	70.906	-1.874	-2.575%	106.358	-5.342	-4.783%				
speckle_noise	2	64.51	-1.9	-2.861%	48.696	-7.204	-12.887%	71.465	-1.315	-1.806%	108.147	-3.553	-3.181%				
zoom_blur	2	56.34	-10.07	-15.163%	43.862	-12.038	-21.534%	60.499	-12.281	-16.873%	69.331	-42.369	-37.931%				
defocus_blur	2	64.54	-1.87	-2.816%	48.402	-7.498	-13.413%	71.422	-1.358	-1.865%	106.664	-5.036	-4.509%				
motion_blur	2	64.21	-2.2	-3.313%	47.949	-7.951	-14.224%	71.796	-0.984	-1.353%	104.266	-7.434	-6.655%				
glass_blur	2	64.06	-2.35	-3.539%	48.346	-7.554	-13.513%	70.088	-2.692	-3.699%	104.132	-7.568	-6.776%				
gaussian_blur	2	64.78	-1.63	-2.454%	48.672	-7.228	-12.930%	72.111	-0.669	-0.919%	107.162	-4.538	-4.063%				
jpeg_compression	2	65.56	-0.85	-1.280%	49.141	-6.759	-12.091%	71.753	-1.027	-1.412%	108.73	-2.97	-2.659%				
contrast	2	64.61	-1.8	-2.710%	48.696	-7.204	-12.887%	70.949	-1.831	-2.516%	106.802	-4.898	-4.385%				
elastic_transform	2	62.7	-3.71	-5.587%	47.217	-8.683	-15.532%	68.25	-4.53	-6.224%	95.436	-16.264	-14.560%				
pixelate	2	62.0	-4.41	-6.641%	47.559	-8.341	-14.921%	67.217	-5.563	-7.644%	97.393	-14.307	-12.809%				
snow	2	58.66	-7.75	-11.670%	45.007	-10.893	-19.486%	66.829	-5.951	-8.176%	86.353	-25.647	-22.961%				
frost	2	59.41	-7.0	-10.541%	45.182	-10.718	-19.173%	68.164	-4.616	-6.342%	88.041	-23.659	-21.181%				
fog	2	63.87	-2.54	-3.825%	48.545	-7.355	-13.157%	66.872	-5.908	-8.117%	105.731	-5.969	-5.344%				
brightness	2	65.54	-0.87	-1.310%	49.03	-6.87	-12.290%	72.083	-0.697	-0.958%	110.209	-1.491	-1.335%				
spatter	2	62.68	-3.73	-5.617%	47.241	-8.659	-15.490%	70.662	-2.911	-4.011%	100.122	-11.578	-10.365%				
saturate	2	60.78	-5.63	-8.478%	47.599	-8.301	-14.850%	68.308	-4.472	-6.145%	102.969	-8.731	-7.817%				
impulse_noise	3	62.77	-3.64	-5.481%	47.663	-8.237	-14.736%	69.643	-3.137	-4.311%	101.158	-10.542	-9.438%				
gaussian_noise	3	62.75	-3.66	-5.511%	47.567	-8.333	-14.907%	69.872	-2.908	-3.995%	101.867	-9.833	-8.803%				
shot_noise	3	62.77	-3.64	-5.481%	47.607	-8.293	-14.836%	69.485	-3.295	-4.528%	101.669	-10.031	-8.981%				
speckle_noise	3	62.93	-3.48	-5.240%	47.869	-8.031	-14.366%	70.03	-2.75	-3.778%	102.022	-9.678	-8.664%				
zoom_blur	3	53.54	-12.87	-19.380%	42.161	-13.739	-24.578%	57.93	-14.85	-20.404%	56.396	-55.304	-49.511%				
defocus_blur	3	62.63	-3.78	-5.692%	47.241	-8.659	-15.490%	70.303	-2.477	-3.404%	100.458	-11.242	-10.064%				
motion_blur	3	62.53	-3.88	-5.842%	47.138	-8.762	-15.675%	70.001	-2.779	-3.818%	97.977	-13.723	-12.285%				
glass_blur	3	59.01	-7.4	-11.143%	45.023	-10.877	-19.458%	68.423	-4.357	-5.987%	84.847	-27.213	-24.263%				
gaussian_blur	3	63.39	-3.02	-4.548%	47.639	-8.261	-14.779%	70.389	-2.391	-3.285%	101.939	-9.761	-8.739%				
jpeg_compression	3	65.07	-1.34	-2.018%	49.205	-6.695	-11.977%	72.37	-0.41	-0.564%	108.003	-3.697	-3.310%				
contrast	3	62.86	-3.55	-5.346%	47.798	-8.102	-14.494%	69.944	-2.836	-3.897%	102.8	-8.9	-7.968%				
elastic_transform	3	64.35	-2.06	-3.102%	48.267	-7.633	-13.655%	70.963	-1.817	-2.496%	104.007	-7.693	-6.887%				
pixelate	3	59.89	-6.52	-9.818%	46.438	-9.462	-16.926%	66.069	-6.711	-9.221%	88.354	-23.346	-20.901%				
snow	3	56.58	-9.83	-14.802%	43.775	-12.125	-21.691%	64.834	-7.946	-10.918%	78.536	-33.164	-29.690%				
frost	3	56.7	-9.71	-14.621%	43.759	-12.141	-21.719%	66.097	-6.683	-9.182%	79.485	-32.215	-28.841%				
fog	3	62.41	-4.0	-6.023%	47.631	-8.269	-14.793%	70.36	-2.42	-3.325%	103.165	-8.535	-7.641%				
brightness	3	64.99	-1.42	-2.138%	49.086	-6.814	-12.190%	71.509	-1.271	-1.747%	108.595	-3.105	-2.780%				
spatter	3	61.06	-5.35	-8.056%	46.494	-9.406	-16.827%	69.757	-3.023	-4.153%	94.485	-17.215	-15.412%				
saturate	3	65.57	-0.84	-1.265%	48.823	-7.077	-12.659%	72.255	-0.525	-0.721%	109.806	-1.894	-1.696%				
impulse_noise	4	60.08	-6.33	-9.532%	46.629	-9.271	-16.585%	67.92	-4.86	-6.677%	91.542	-20.158	-18.047%				
gaussian_noise	4	60.52	-5.89	-8.669%	46.669	-9.231	-16.514%	67.92	-4.86	-6.677%	93.698	-18.002	-16.117%				
shot_noise	4	59.86	-6.55	-9.863%	46.43	-9.47	-16.940%	66.858	-5.922	-8.137%	92.268	-19.432	-17.397%				
speckle_noise	4	61.76	-6.65	-7.002%	47.368	-8.532	-15.262%	68.121	-4.659	-6.401%	97.948	-13.752	-12.311%				
zoom_blur	4	51.82	-14.59	-21.970%	40.491	-15.409	-27.565%	56.294	-16.486	-22.652%	45.757	-65.943	-59.036%				
defocus_blur	4	60.99	-5.42	-8.161%	46.343	-9.557	-17.097%	68.121	-4.659	-6.401%	92.304	-19.396	-17.364%				
motion_blur	4	59.72	-6.69	-10.074%	45.818	-10.082	-18.036%	67.016	-5.764	-7.920%	86.089	-25.611	-22.928%				
glass_blur	4	57.15	-9.26	-13.944%	43.401	-12.499	-22.359%	67.303	-5.477	-7.525%	77.581	-34.119	-30.545%				
gaussian_blur	4	61.56	-4.85	-7.303%	46.661	-9.239	-16.528%	69.212	-3.568	-4.902%	95.388	-16.312	-14.603%				
jpeg_compression	4	64.02	-2.39	-3.599%	48.227	-7.673	-13.726%	70.777	-2.003	-2.753%	104.095	-7.605	-6.808%				
contrast	4	58.47	-7.94	-11.956%	45.5	-10.4	-18.605%	65.121	-7.659	-10.523%	90.667	-21.033	-18.830%				
elastic_transform	4	62.24	-4.17	-6.279%	46.542	-9.358	-16.741%	71.107	-1.673	-2.299%	95.638	-16.062	-14.380%				
pixelate	4	55.85	-10.56	-15.901%	44.141	-11.759	-21.037%	61.461	-11.319	-15.552%	72.151	-39.549	-35.406%				
snow	4	53.48	-12.93	-19.470%	41.207	-14.693	-26.285%	62.71	-10.07	-13.836%	63.568	-48.132	-43.090%				
frost	4	55.96	-10.45	-15.736%	43.512	-12.388	-22.160%	65.767	-7.013	-9.636%	76.794	-34.906	-31.250%				
fog	4	61.0	-5.41	-8.146%	46.677	-9.223	-16.500%	69.427	-3.353	-4.607%	97.95	-13.75	-12.310%				
brightness	4	64.03	-2.38	-3.584%	48.489	-7.411	-13.257%	70.518	-2.262	-3.108%	106.423	-5.277	-4.724%				
spatter	4	58.95	-7.46	-11.233%	44.514	-11.386	-20.368%	67.26	-5.52	-7.585%	85.064	-26.636	-23.846%				
saturate	4	62.76	-3.65	-5.496%	47.122	-8.778	-15.703%	69.528	-3.252	-4.469%	103.783	-7.917	-7.088%				
impulse_noise	5	56.48	-9.93	-14.953%	44.657	-11.243	-20.112%	64.935	-7.845	-10.779%	78.788	-32.912	-29.465%				
gaussian_noise	5	56.4	-10.01	-15.073%	43.91	-11.99	-21.449%	65.05	-7.73	-10.622%	79.632	-32.068	-28.709%				
shot_noise	5	57.21	-9.2	-13.855%	44.586	-11.314	-20.240%	65.021	-7.759	-10.661%	81.986	-29.714	-26.602%				
speckle_noise	5	59.94	-6.47	-9.743%	46.828	-9.072	-16.229%	66.485	-6.295	-8.650%	91.411	-20.289	-18.164%				
zoom_blur	5	49.58	-16.83	-25.343%	39.06	-16.84	-30.125%	55.06	-17.72	-24.348%	37.009	-74.691	-66.867%				
defocus_blur	5	59.16	-7.25	-10.917%	45.58	-10.32	-18.462%	66.284	-6.496	-8.926%	83.256	-28.444	-25.465%				
motion_blur	5	57.21	-9.2	-13.855%	44.8	-11.1	-19.856%	65.222	-7.558	-10.385%	74.122	-37.578	-33.642%				
glass_blur	5	54.04	-12.37	-18.627%	41.326	-14.574	-26.071%	65.667	-7.113	-9.774%	64.263	-47.377	-42.468%				
gaussian_blur	5	57.96	-8.45	-12.724%	44.785	-11.115	-1										

Table 26: Performance and decrease ratio of Single Compacter on CLIP-T5 against image corruptions given severity 1 to 5.

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	1	64.34	-1.64	-2.486%	49.173	-6.157	-11.127%	70.604	-0.866	-1.211%	106.839	-4.769	-4.273%
gaussian_noise	1	65.06	-0.92	-1.394%	49.698	-5.632	-10.179%	71.48	0.01	0.014%	109.21	-2.398	-2.148%
shot_noise	1	64.69	-1.29	-1.955%	49.873	-5.457	-9.863%	71.178	-0.292	-0.408%	109.533	-2.075	-1.859%
speckle_noise	1	65.11	-0.87	-1.319%	49.555	-5.775	-10.438%	71.006	-0.464	-0.649%	108.916	-2.692	-2.412%
zoom_blur	1	59.27	-6.71	-10.170%	46.303	-9.027	-16.315%	56.653	-14.817	-20.732%	84.187	-27.421	-24.569%
defocus_blur	1	64.96	-1.02	-1.546%	50.246	-5.084	-9.188%	71.523	0.053	0.074%	108.313	-3.295	-2.952%
motion_blur	1	64.57	-1.41	-2.137%	50.08	-5.25	-9.489%	71.465	-0.005	-0.006%	107.603	-4.005	-3.589%
glass_blur	1	65.0	-0.98	-1.485%	49.936	-5.394	-9.748%	71.81	0.34	0.476%	107.836	-3.772	-3.380%
gaussian_blur	1	65.67	-0.31	-0.470%	50.509	-4.821	-8.713%	72.154	0.684	0.958%	110.363	-1.245	-1.116%
jpeg_compression	1	65.33	-0.65	-0.985%	49.865	-5.465	-9.877%	71.695	0.225	0.315%	110.22	-1.388	-1.244%
contrast	1	64.47	-1.51	-2.289%	49.897	-5.433	-9.820%	71.293	-0.177	-0.247%	109.325	-2.283	-2.046%
elastic_transform	1	65.56	-0.42	-0.637%	50.461	-4.869	-8.800%	70.92	-0.55	-0.769%	109.553	-2.055	-1.842%
pixelate	1	62.55	-3.43	-5.199%	49.078	-6.252	-11.300%	69.255	-2.215	-3.099%	99.334	-12.774	-10.997%
snow	1	61.8	-4.18	-6.335%	47.233	-8.097	-14.634%	69.356	-2.114	-2.959%	98.235	-13.373	-11.982%
frost	1	62.99	-2.99	-4.532%	48.275	-7.055	-12.751%	69.7	-1.77	-2.477%	101.553	-10.055	-9.009%
fog	1	64.06	-1.92	-2.910%	49.014	-6.316	-11.415%	71.107	-0.363	-0.508%	108.101	-3.507	-3.142%
brightness	1	65.77	-0.21	-0.318%	50.342	-4.988	-9.015%	72.269	0.799	1.118%	111.312	-0.296	-0.265%
spatter	1	65.54	-0.44	-0.667%	50.358	-4.972	-8.987%	71.867	0.397	0.556%	110.781	-0.827	-0.741%
saturate	1	63.23	-2.75	-4.168%	49.125	-6.205	-11.214%	69.858	-1.612	-2.256%	108.422	-3.186	-2.855%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	2	63.37	-2.61	-3.956%	48.156	-7.174	-12.967%	69.815	-1.655	-2.316%	103.597	-8.011	-7.178%
gaussian_noise	2	64.15	-1.83	-2.774%	48.951	-6.379	-11.530%	70.604	-0.866	-1.211%	106.617	-4.991	-4.472%
shot_noise	2	64.11	-1.87	-2.834%	48.648	-6.682	-12.076%	70.375	-1.095	-1.533%	106.087	-5.521	-4.947%
speckle_noise	2	64.47	-1.51	-2.289%	49.499	-5.831	-10.538%	70.446	-1.024	-1.432%	107.824	-3.784	-3.391%
zoom_blur	2	56.25	-9.73	-14.747%	43.616	-11.714	-21.171%	61.246	-10.224	-14.305%	69.493	-42.115	-37.735%
defocus_blur	2	64.31	-1.67	-2.531%	49.841	-5.489	-9.920%	70.848	-0.622	-0.870%	106.883	-4.725	-4.234%
motion_blur	2	63.87	-2.11	-3.198%	49.404	-5.926	-10.711%	71.193	-0.277	-0.388%	104.626	-6.982	-6.256%
glass_blur	2	63.92	-2.06	-3.122%	48.744	-6.586	-11.903%	70.418	-1.052	-1.472%	105.046	-6.562	-5.879%
gaussian_blur	2	64.76	-1.22	-1.849%	49.849	-5.481	-9.906%	71.465	-0.005	-0.006%	108.204	-3.404	-3.050%
jpeg_compression	2	65.31	-0.67	-1.015%	49.777	-5.553	-10.035%	71.394	-0.076	-0.107%	109.696	-1.912	-1.713%
contrast	2	63.99	-1.99	-3.016%	49.531	-5.799	-10.481%	70.332	-1.138	-1.593%	107.232	-4.376	-3.921%
elastic_transform	2	62.63	-3.35	-5.077%	48.124	-7.206	-13.024%	67.906	-3.564	-4.987%	95.87	-15.738	-14.101%
pixelate	2	61.75	-4.23	-6.411%	48.378	-6.952	-12.564%	66.327	-5.143	-7.196%	98.188	-13.42	-12.024%
snow	2	59.0	-6.98	-10.579%	44.999	-10.331	-18.671%	66.944	-4.526	-6.332%	86.967	-22.641	-22.078%
frost	2	59.47	-6.51	-9.867%	46.057	-9.273	-16.760%	67.604	-3.866	-5.409%	89.402	-22.206	-19.897%
fog	2	63.53	-2.45	-3.713%	49.11	-6.22	-11.242%	67.274	-4.196	-5.871%	106.995	-4.613	-4.133%
brightness	2	65.24	-0.74	-1.122%	49.849	-5.481	-9.906%	72.068	0.598	0.837%	109.509	-2.099	-1.881%
spatter	2	62.55	-3.43	-5.199%	47.845	-7.485	-13.527%	70.59	-0.88	-1.231%	101.615	-9.933	-8.954%
saturate	2	60.67	-5.31	-8.048%	48.06	-7.27	-13.139%	68.38	-3.09	-4.324%	103.972	-7.636	-6.842%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	3	62.57	-3.41	-5.168%	48.235	-7.095	-12.823%	68.81	-2.66	-3.722%	101.344	-10.264	-9.196%
gaussian_noise	3	62.38	-3.6	-5.456%	47.949	-7.381	-13.340%	69.456	-2.014	-2.818%	102.499	-9.109	-8.162%
shot_noise	3	62.61	-3.37	-5.108%	48.362	-6.968	-12.593%	69.068	-2.402	-3.360%	102.088	-9.52	-8.530%
speckle_noise	3	62.73	-3.25	-4.926%	48.585	-6.745	-12.191%	69.499	-1.971	-2.758%	101.562	-10.046	-9.001%
zoom_blur	3	53.24	-12.74	-19.309%	42.686	-12.644	-22.853%	58.375	-13.095	-18.322%	55.099	-56.509	-50.632%
defocus_blur	3	62.52	-3.46	-5.244%	48.704	-6.626	-11.975%	68.781	-2.689	-3.762%	100.846	-10.762	-9.643%
motion_blur	3	62.18	-3.8	-5.759%	48.346	-6.984	-12.622%	69.399	-2.071	-2.898%	99.063	-12.545	-11.241%
glass_blur	3	59.11	-6.87	-10.412%	45.723	-9.607	-17.364%	67.877	-3.593	-5.027%	85.808	-25.8	-23.117%
gaussian_blur	3	63.2	-2.78	-4.213%	49.07	-6.26	-11.314%	69.729	-1.741	-2.436%	102.557	-9.051	-8.109%
jpeg_compression	3	64.84	-1.14	-1.728%	50.024	-5.306	-9.590%	70.863	-0.607	-0.850%	108.493	-3.115	-2.791%
contrast	3	62.71	-3.27	-4.956%	48.394	-6.936	-12.536%	69.212	-2.258	-3.159%	103.634	-7.974	-7.144%
elastic_transform	3	64.03	-1.95	-2.955%	48.696	-6.634	-11.990%	71.322	-0.148	-0.207%	104.616	-6.992	-6.265%
pixelate	3	59.65	-6.33	-9.594%	47.639	-7.691	-13.901%	65.365	-6.105	-8.542%	88.857	-22.751	-20.385%
snow	3	57.15	-8.83	-13.383%	43.974	-11.356	-20.525%	65.523	-5.947	-8.321%	79.64	-31.968	-28.643%
frost	3	57.42	-8.56	-12.974%	44.705	-10.625	-19.203%	65.394	-6.076	-8.501%	80.379	-31.229	-27.981%
fog	3	62.29	-3.69	-5.593%	48.418	-6.912	-12.493%	69.973	-1.497	-2.095%	103.726	-7.882	-7.063%
brightness	3	64.73	-1.25	-1.895%	49.785	-5.545	-10.021%	70.877	-0.593	-0.830%	108.626	-2.982	-2.672%
spatter	3	61.05	-4.93	-7.472%	47.353	-7.977	-14.418%	69.657	-1.813	-2.537%	95.073	-16.535	-14.815%
saturate	3	65.19	-0.79	-1.197%	49.65	-5.68	-10.265%	71.796	0.326	0.456%	109.935	-1.673	-1.499%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	4	59.9	-6.08	-9.215%	46.621	-8.709	-15.740%	66.915	-4.555	-6.373%	92.218	-19.39	-17.373%
gaussian_noise	4	60.16	-5.82	-8.821%	47.166	-8.184	-14.792%	66.93	-4.54	-6.533%	92.785	-18.823	-16.866%
shot_noise	4	59.64	-6.34	-9.609%	46.796	-8.534	-15.424%	66.485	-4.985	-6.975%	91.896	-19.712	-17.662%
speckle_noise	4	61.51	-4.47	-6.775%	47.957	-7.373	-13.326%	68.092	-3.378	-4.726%	99.309	-12.299	-11.020%
zoom_blur	4	51.26	-14.72	-22.310%	40.881	-14.449	-26.114%	57.055	-14.415	-20.170%	46.028	-65.58	-58.759%
defocus_blur	4	60.91	-5.07	-7.684%	47.058	-8.272	-14.950%	67.834	-3.636	-5.087%	93.843	-17.765	-15.917%
motion_blur	4	59.6	-6.38	-9.670%	46.661	-8.669	-15.668%	66.6	-4.87	-6.814%	86.126	-25.482	-22.832%
glass_blur	4	56.87	-9.11	-13.807%	44.482	-10.848	-19.605%	66.528	-4.942	-6.915%	77.062	-34.546	-30.953%
gaussian_blur	4	61.44	-4.54	-6.881%	47.694	-7.636	-13.800%	68.078	-3.392	-4.746%	96.446	-15.162	-13.585%
jpeg_compression	4	63.77	-2.21	-3.349%	49.213	-6.117	-11.056%	70.044	-1.426	-1.995%	105.105	-6.503	-5.826%
contrast	4	58.69	-7.29	-11.049%	46.057	-9.273	-16.760%	65.595	-5.875	-8.220%	90.592	-21.016	-18.830%
elastic_transform	4	62.05	-3.93	-5.956%	47.368	-7.962	-14.389%	69.743	-1.727	-2.416%	96.739	-14.869	-13.323%
pixelate	4	55.86	-10.12	-15.338%	44.697	-10.633	-19.217%	61.877	-9.593	-13.422%	73.555	-38.053	-34.095%
snow	4	53.9	-12.08	-18.309%	42.185	-13.145	-23.758%	61.964	-9.506	-13.301%	64.249	-47.359	-42.434%
frost	4	56.09	-9.89	-14.989%	43.799	-11.531	-20.841%	64.719	-6.751	-9.445%	76.758	-34.85	-31.226%
fog	4	60.65	-5.33	-8.078%	47.678	-7.652	-13.829%	68.423	-3.047	-4.264%	98.035	-13.573	-12.161%
brightness	4	63.93	-2.05	-3.107%	49.388	-5.942	-10.740%	69.542	-1.928	-2.697%	105.8	-5.808	-5.203%
spatter	4	58.78	-7.2	-10.912%	45.111	-10.219	-18.470%	66.901	-4.569	-6.393%	86.529	-25.079	-22.471%
saturate	4	62.61	-3.37	-5.108%	48.497	-6.833	-12.349%	69.183	-2.287	-3.200%	104.089	-7.519	-6.737%

corruption	severity	VQA			GQA			NLVR			Caption		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
impulse_noise	5	55.93	-10.05	-15.232%	44.3	-11.03	-19.936%	63.916	-7.554	-10.570%	79.424	-32.184	-28.837%
gaussian_noise	5	55.97	-10.01	-15.171%	44.355	-10.975	-19.835%	64.145	-7.325	-10.249%	78.576	-33.032	-29.596%
shot_noise	5	57.1	-8.88	-13.459%	44.721	-10.609	-19.174%	64.303	-7.167	-10.028%	83.25	-28.358	-25.409%
speckle_noise	5	59.57											

Table 27: Performance and decrease ratio of Full Finetuning on CLIP-BART against text corruptions given severity 1 to 4.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	1.0	55.75	-11.0	-16.479%	44.769	-10.271	-18.662%	56.581	-16.429	-22.502%
typos	1.0	57.86	-8.89	-13.318%	46.128	-8.912	-16.192%	70.044	-2.966	-4.062%
keyboard	1.0	56.36	-10.39	-15.566%	44.753	-10.287	-18.691%	69.671	-3.339	-4.573%
spell_error	1.0	57.38	-9.37	-14.037%	46.375	-8.665	-15.744%	69.915	-3.095	-4.239%
random_char_insert	1.0	52.55	-14.2	-21.273%	36.015	-19.025	-34.565%	64.605	-8.405	-11.513%
random_char_replace	1.0	48.69	-18.06	-27.056%	32.35	-22.69	-41.224%	62.48	-10.53	-14.422%
random_char_swap	1.0	42.09	-24.66	-36.944%	26.499	-28.541	-51.856%	58.088	-14.922	-20.438%
random_char_delete	1.0	50.47	-16.28	-24.390%	34.982	-20.058	-36.443%	63.298	-9.712	-13.302%
random_word_insert	1.0	66.71	-0.04	-0.060%	52.568	-2.472	-4.491%	71.308	-1.702	-2.332%
random_word_delete	1.0	66.55	-0.2	-0.300%	53.896	-1.144	-2.079%	72.255	-0.755	-1.034%
swap_syn_word_emb	1.0	55.57	-11.18	-16.749%	46.232	-8.808	-16.004%	67.604	-5.406	-7.404%
swap_syn_word_net	1.0	58.71	-8.04	-12.045%	47.535	-7.505	-13.635%	70.533	-2.477	-3.393%
random_word_swap	1.0	66.67	-0.08	-0.120%	54.071	-0.969	-1.761%	72.47	-0.54	-0.739%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	2.0	55.49	-11.26	-16.869%	39.998	-15.042	-27.328%	65.509	-7.501	-10.274%
typos	2.0	56.43	-10.32	-15.461%	41.294	-13.746	-24.974%	66.241	-6.769	-9.272%
keyboard	2.0	55.84	-10.91	-16.345%	40.022	-15.018	-27.285%	65.652	-7.358	-10.078%
spell_error	2.0	57.18	-9.57	-14.337%	42.28	-12.76	-23.183%	66.671	-6.339	-8.682%
random_char_insert	2.0	41.54	-25.21	-37.768%	26.101	-28.939	-52.578%	59.05	-13.96	-19.121%
random_char_replace	2.0	36.15	-30.6	-45.843%	22.404	-32.636	-59.295%	56.796	-16.214	-22.207%
random_char_swap	2.0	32.66	-34.09	-51.071%	20.782	-34.258	-62.241%	54.816	-18.194	-24.920%
random_char_delete	2.0	38.71	-28.04	-42.007%	25.338	-29.702	-53.965%	57.887	-15.123	-20.713%
random_word_insert	2.0	65.25	-1.5	-2.247%	47.233	-7.807	-14.184%	68.724	-4.286	-5.870%
random_word_delete	2.0	60.35	-6.4	-9.588%	48.434	-6.606	-12.003%	69.686	-3.324	-4.553%
swap_syn_word_emb	2.0	55.13	-11.62	-17.408%	42.113	-12.927	-23.486%	62.94	-10.07	-13.793%
swap_syn_word_net	2.0	57.75	-9.0	-13.483%	44.443	-10.597	-19.254%	66.557	-6.453	-8.839%
random_word_swap	2.0	65.49	-1.26	-1.888%	51.868	-3.172	-5.762%	72.126	-0.884	-1.211%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	3.0	50.29	-16.46	-24.659%	31.881	-23.159	-42.077%	59.968	-13.042	-17.863%
typos	3.0	51.4	-15.35	-22.996%	34.306	-20.734	-37.671%	63.901	-9.109	-12.476%
keyboard	3.0	50.14	-16.61	-24.884%	31.857	-23.183	-42.120%	62.581	-10.429	-14.285%
spell_error	3.0	51.32	-15.43	-23.116%	34.616	-20.424	-37.108%	62.753	-10.257	-14.049%
random_char_insert	3.0	33.4	-33.35	-49.963%	21.259	-33.781	-61.375%	55.82	-17.19	-23.544%
random_char_replace	3.0	28.51	-38.24	-57.288%	18.771	-36.269	-65.896%	54.83	-18.18	-24.901%
random_char_swap	3.0	28.26	-38.49	-57.663%	18.588	-36.452	-66.228%	51.859	-21.151	-28.970%
random_char_delete	3.0	31.71	-35.04	-52.494%	21.021	-34.019	-61.808%	54.557	-18.453	-25.274%
random_word_insert	3.0	63.51	-3.24	-4.854%	41.628	-13.412	-24.367%	66.341	-6.669	-9.134%
random_word_delete	3.0	57.44	-9.31	-13.948%	43.862	-11.178	-20.308%	67.188	-5.822	-7.974%
swap_syn_word_emb	3.0	50.7	-16.05	-24.045%	36.039	-19.001	-34.522%	59.61	-13.4	-18.354%
swap_syn_word_net	3.0	54.09	-12.66	-18.966%	39.323	-15.717	-28.556%	64.375	-8.635	-11.827%
random_word_swap	3.0	64.85	-1.9	-2.846%	50.024	-5.016	-9.114%	70.963	-2.047	-2.804%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	4.0	43.5	-23.25	-34.831%	26.88	-28.16	-51.162%	56.854	-16.156	-22.129%
typos	4.0	43.21	-23.54	-35.266%	27.54	-27.5	-49.963%	59.925	-13.085	-17.922%
keyboard	4.0	40.5	-26.25	-39.326%	25.298	-29.742	-54.037%	59.064	-13.946	-19.101%
spell_error	4.0	43.0	-23.75	-35.581%	28.518	-26.522	-48.187%	58.72	-14.29	-19.573%
random_char_insert	4.0	27.94	-38.81	-58.142%	19.145	-35.895	-65.217%	54.342	-18.668	-25.569%
random_char_replace	4.0	23.72	-43.03	-64.464%	17.427	-37.613	-68.337%	53.108	-19.902	-27.260%
random_char_swap	4.0	26.2	-40.55	-60.749%	18.047	-36.993	-67.210%	51.514	-21.496	-29.442%
random_char_delete	4.0	26.09	-40.66	-60.914%	18.97	-36.07	-65.535%	53.222	-19.788	-27.103%
random_word_insert	4.0	59.59	-7.16	-10.727%	37.963	-17.077	-31.026%	65.093	-7.917	-10.844%
random_word_delete	4.0	50.03	-16.72	-25.049%	37.987	-17.053	-30.983%	66.04	-6.97	-9.547%
swap_syn_word_emb	4.0	46.8	-19.95	-29.888%	32.994	-22.046	-40.054%	57.485	-15.525	-21.264%
swap_syn_word_net	4.0	50.61	-16.14	-24.180%	36.476	-18.564	-33.727%	61.059	-11.951	-16.369%
random_word_swap	4.0	64.18	-2.57	-3.850%	48.839	-6.201	-11.266%	71.537	-1.473	-2.017%

Table 28: Performance and decrease ratio of Full Finetuning on CLIP-BART against text corruptions given severity 5.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	5.0	40.23	-26.52	-39.730%	23.66	-31.38	-57.012%	54.17	-18.84	-25.805%
punctuation	5.0	65.94	-0.81	-1.213%	54.309	-0.731	-1.328%	72.355	-0.655	-0.897%
typos	5.0	30.35	-36.4	-54.532%	19.979	-35.061	-63.700%	53.136	-19.874	-27.221%
keyboard	5.0	27.34	-39.41	-59.041%	18.055	-36.985	-67.196%	50.854	-22.156	-30.346%
spell_error	5.0	36.24	-30.51	-45.708%	24.257	-30.783	-55.929%	55.691	-17.319	-23.721%
random_char_insert	5.0	23.51	-43.24	-64.779%	17.849	-37.191	-67.572%	52.591	-20.419	-27.968%
random_char_replace	5.0	19.82	-46.93	-70.307%	16.092	-38.948	-70.764%	51.974	-21.036	-28.813%
random_char_swap	5.0	25.33	-41.42	-62.052%	18.922	-36.118	-65.621%	52.591	-20.419	-27.968%
random_char_delete	5.0	22.22	-44.53	-66.712%	18.095	-36.945	-67.124%	51.615	-21.395	-29.305%
to_passive	5.0	62.82	-3.93	-5.888%	51.224	-3.816	-6.932%	70.131	-2.879	-3.944%
tense	5.0	65.81	-0.94	-1.408%	54.826	-0.214	-0.389%	73.044	0.034	0.047%
to_formal	5.0	66.24	-0.51	-0.764%	53.935	-1.105	-2.007%	72.47	-0.54	-0.739%
to_casual	5.0	63.58	-3.17	-4.749%	51.566	-3.474	-6.311%	71.107	-1.903	-2.607%
to_active	5.0	64.88	-1.87	-2.801%	53.26	-1.78	-3.235%	72.384	-0.626	-0.857%
double_denial	5.0	66.63	-0.12	-0.180%	55.033	-0.007	-0.013%	73.016	0.006	0.008%
insert_adv	5.0	61.67	-5.08	-7.610%	49.61	-5.43	-9.865%	70.547	-2.463	-3.374%
append_irr	5.0	60.56	-6.19	-9.273%	47.194	-7.846	-14.256%	66.571	-6.439	-8.819%
random_word_insert	5.0	55.76	-10.99	-16.464%	32.0	-23.04	-41.860%	63.356	-9.654	-13.223%
drop_nn	5.0	43.85	-22.9	-34.307%	30.919	-24.121	-43.824%	60.672	-12.338	-16.899%
drop_rand_one_nn	5.0	57.5	-9.25	-13.858%	45.476	-9.564	-17.376%	71.049	-1.961	-2.686%
drop_vb	5.0	58.63	-8.12	-12.165%	40.356	-14.684	-26.678%	68.451	-4.559	-6.244%
drop_vb_nn	5.0	43.14	-23.61	-35.371%	27.373	-27.667	-50.267%	57.858	-15.152	-20.753%
only_nn	5.0	32.64	-34.11	-51.101%	20.234	-34.806	-63.238%	52.16	-20.85	-28.557%
only_vb	5.0	51.97	-14.78	-22.142%	39.831	-15.209	-27.632%	65.265	-7.745	-10.608%
only_vb_nn	5.0	37.61	-29.14	-43.655%	21.848	-33.192	-60.306%	54.084	-18.926	-25.923%
drop_rand_one_vb	5.0	63.63	-3.12	-4.674%	47.257	-7.783	-14.140%	71.035	-1.975	-2.705%
drop_first	5.0	56.8	-9.95	-14.906%	39.744	-15.296	-27.791%	70.748	-2.262	-3.098%
drop_last	5.0	54.22	-12.53	-18.772%	45.548	-9.492	-17.246%	69.068	-3.942	-5.399%
drop_first_and_last	5.0	40.6	-26.15	-39.176%	31.436	-23.604	-42.885%	65.294	-7.716	-10.569%
shuffle_order	5.0	59.93	-6.82	-10.217%	41.724	-13.316	-24.194%	68.408	-4.602	-6.303%
random_word_delete	5.0	42.58	-24.17	-36.210%	31.849	-23.191	-42.134%	63.959	-9.051	-12.397%
swap_syn_word_emb	5.0	46.06	-20.69	-30.996%	32.0	-23.04	-41.860%	57.916	-15.094	-20.674%
swap_syn_word_net	5.0	46.31	-20.44	-30.622%	35.165	-19.875	-36.111%	58.619	-14.391	-19.711%
back_trans	5.0	62.77	-3.98	-5.963%	50.549	-4.491	-8.160%	71.781	-1.229	-1.683%
random_word_swap	5.0	63.54	-3.21	-4.809%	47.917	-7.123	-12.942%	70.69	-2.32	-3.177%
nonsense	5.0	0.0	-66.75	-100.000%	17.038	-38.002	-69.045%	51.227	-21.783	-29.835%

Table 29: Performance and decrease ratio of Half-shared Adapters on CLIP-BART against text corruptions given severity 1 to 4.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	1.0	55.06	-10.14	-15.552%	42.662	-10.298	-19.445%	55.304	-14.726	-21.029%
typos	1.0	56.41	-8.79	-13.482%	45.015	-7.945	-15.002%	67.963	-2.067	-2.951%
keyboard	1.0	55.45	-9.75	-14.954%	43.91	-9.05	-17.088%	67.332	-2.698	-3.853%
spell_error	1.0	55.93	-9.27	-14.218%	45.031	-7.929	-14.972%	67.389	-2.641	-3.771%
random_char_insert	1.0	51.8	-13.4	-20.552%	36.087	-16.873	-31.860%	62.064	-7.966	-11.375%
random_char_replace	1.0	47.95	-17.25	-26.457%	32.644	-20.316	-38.360%	60.126	-9.904	-14.142%
random_char_swap	1.0	41.02	-24.18	-37.086%	26.515	-26.445	-49.935%	55.476	-14.554	-20.783%
random_char_delete	1.0	49.17	-16.03	-24.586%	34.107	-18.853	-35.598%	61.131	-8.899	-12.707%
random_word_insert	1.0	65.15	-0.05	-0.077%	51.328	-1.632	-3.082%	69.714	-0.316	-0.451%
random_word_delete	1.0	65.02	-0.18	-0.276%	51.813	-1.147	-2.166%	69.815	-0.215	-0.307%
swap_syn_word_emb	1.0	55.38	-9.82	-15.061%	45.659	-7.301	-13.786%	65.738	-4.292	-6.128%
swap_syn_word_net	1.0	57.86	-7.34	-11.258%	45.54	-7.42	-14.011%	68.006	-2.024	-2.890%
random_word_swap	1.0	65.1	-0.1	-0.153%	52.163	-0.797	-1.506%	69.714	-0.316	-0.451%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	2.0	54.41	-10.79	-16.549%	38.822	-14.138	-26.696%	63.313	-6.717	-9.592%
typos	2.0	55.4	-9.8	-15.031%	40.595	-12.365	-23.348%	64.834	-5.196	-7.419%
keyboard	2.0	54.98	-10.22	-15.675%	39.768	-13.192	-24.910%	64.174	-5.856	-8.362%
spell_error	2.0	55.42	-9.78	-15.000%	41.93	-11.03	-20.826%	64.791	-5.239	-7.481%
random_char_insert	2.0	41.39	-23.81	-36.518%	26.419	-26.541	-50.115%	55.347	-14.683	-20.967%
random_char_replace	2.0	37.23	-27.97	-42.899%	22.619	-30.341	-57.291%	53.352	-16.678	-23.816%
random_char_swap	2.0	32.29	-32.91	-50.475%	19.447	-33.513	-63.280%	50.854	-19.176	-27.383%
random_char_delete	2.0	38.42	-26.78	-41.074%	25.449	-27.511	-51.946%	56.021	-14.009	-20.004%
random_word_insert	2.0	64.26	-0.94	-1.442%	47.837	-5.123	-9.672%	68.681	-1.349	-1.926%
random_word_delete	2.0	59.85	-5.35	-8.206%	45.635	-7.325	-13.831%	68.064	-1.966	-2.808%
swap_syn_word_emb	2.0	54.59	-10.61	-16.273%	42.574	-10.386	-19.610%	61.791	-8.239	-11.765%
swap_syn_word_net	2.0	57.46	-7.74	-11.871%	43.632	-9.328	-17.614%	65.968	-4.062	-5.800%
random_word_swap	2.0	63.95	-1.25	-1.917%	49.897	-3.063	-5.784%	69.083	-0.947	-1.353%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	3.0	49.77	-15.43	-23.666%	31.221	-21.739	-41.048%	58.992	-11.038	-15.761%
typos	3.0	50.85	-14.35	-22.009%	34.147	-18.813	-35.523%	61.289	-8.741	-12.482%
keyboard	3.0	49.41	-15.79	-24.218%	33.042	-19.918	-37.610%	60.098	-9.932	-14.183%
spell_error	3.0	50.33	-14.87	-22.807%	35.029	-17.931	-33.857%	61.576	-8.454	-12.072%
random_char_insert	3.0	34.78	-30.42	-46.656%	21.275	-31.685	-59.828%	52.203	-17.827	-25.456%
random_char_replace	3.0	31.33	-33.87	-51.948%	18.119	-34.841	-65.788%	50.696	-19.334	-27.608%
random_char_swap	3.0	28.51	-36.69	-56.273%	17.149	-35.811	-67.619%	50.208	-19.822	-28.305%
random_char_delete	3.0	33.0	-32.2	-49.387%	20.266	-32.694	-61.734%	53.05	-16.98	-24.247%
random_word_insert	3.0	63.47	-1.73	-2.653%	44.872	-8.088	-15.272%	68.293	-1.737	-2.480%
random_word_delete	3.0	57.15	-8.05	-12.347%	41.954	-11.006	-20.781%	65.494	-4.536	-6.477%
swap_syn_word_emb	3.0	50.79	-14.41	-22.101%	37.065	-15.895	-30.014%	58.921	-11.109	-15.864%
swap_syn_word_net	3.0	53.94	-11.26	-17.270%	38.591	-14.369	-27.131%	62.566	-7.464	-10.658%
random_word_swap	3.0	63.24	-1.96	-3.006%	48.656	-4.304	-8.126%	68.767	-1.263	-1.803%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	4.0	43.02	-22.18	-34.018%	26.276	-26.684	-50.385%	55.863	-14.167	-20.229%
typos	4.0	42.01	-23.19	-35.567%	27.588	-25.372	-47.908%	57.672	-12.358	-17.647%
keyboard	4.0	40.04	-25.16	-38.589%	26.014	-26.946	-50.881%	56.882	-13.148	-18.774%
spell_error	4.0	41.43	-23.77	-36.457%	28.701	-24.259	-45.806%	57.155	-12.875	-18.385%
random_char_insert	4.0	30.45	-34.75	-53.298%	17.554	-35.406	-66.853%	50.452	-19.578	-27.956%
random_char_replace	4.0	28.05	-37.15	-56.979%	15.145	-37.815	-71.402%	50.438	-19.592	-27.977%
random_char_swap	4.0	26.75	-38.45	-58.972%	15.869	-37.091	-70.036%	50.065	-19.965	-28.510%
random_char_delete	4.0	29.76	-35.44	-54.356%	17.936	-35.024	-66.133%	51.385	-18.645	-26.624%
random_word_insert	4.0	61.26	-3.94	-6.043%	41.724	-11.236	-21.217%	67.217	-2.813	-4.017%
random_word_delete	4.0	50.83	-14.37	-22.040%	35.928	-17.032	-32.160%	64.217	-5.813	-8.301%
swap_syn_word_emb	4.0	46.53	-18.67	-28.635%	34.258	-18.702	-35.313%	57.959	-12.071	-17.237%
swap_syn_word_net	4.0	50.42	-14.78	-22.669%	35.888	-17.072	-32.236%	59.638	-10.392	-14.839%
random_word_swap	4.0	62.6	-2.6	-3.988%	47.194	-5.766	-10.888%	68.896	-1.134	-1.619%



Table 30: Performance and decrease ratio of Half-shared Adapters on CLIP-BART against text corruptions given severity 5.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	5.0	39.61	-25.59	-39.248%	23.644	-29.316	-55.354%	53.337	-16.693	-23.837%
punctuation	5.0	64.58	-0.62	-0.951%	51.63	-1.33	-2.512%	69.628	-0.402	-0.574%
typos	5.0	29.71	-35.49	-54.433%	19.908	-33.052	-62.410%	51.687	-18.343	-26.194%
keyboard	5.0	27.36	-37.84	-58.037%	18.986	-33.974	-64.151%	50.61	-19.42	-27.731%
spell_error	5.0	34.42	-30.78	-47.209%	24.503	-28.457	-53.733%	54.457	-15.573	-22.238%
random_char_insert	5.0	28.04	-37.16	-56.994%	16.147	-36.813	-69.510%	49.677	-20.353	-29.063%
random_char_replace	5.0	26.58	-38.62	-59.233%	13.54	-39.42	-74.434%	50.079	-19.951	-28.489%
random_char_swap	5.0	26.08	-39.12	-60.000%	16.227	-36.733	-69.360%	51.112	-18.918	-27.014%
random_char_delete	5.0	27.36	-37.84	-58.037%	16.6	-36.36	-68.655%	51.184	-18.846	-26.911%
to_passive	5.0	62.61	-2.59	-3.972%	45.937	-7.023	-13.260%	67.159	-2.871	-4.099%
tense	5.0	64.41	-0.79	-1.212%	52.608	-0.352	-0.665%	69.7	-0.33	-0.471%
to_formal	5.0	64.81	-0.39	-0.598%	52.123	-0.837	-1.581%	69.585	-0.445	-0.635%
to_casual	5.0	62.36	-2.84	-4.356%	48.171	-4.789	-9.042%	68.537	-1.493	-2.131%
to_active	5.0	63.44	-1.76	-2.699%	50.143	-2.817	-5.319%	69.327	-0.703	-1.004%
double_denial	5.0	65.15	-0.05	-0.077%	52.965	0.005	0.010%	70.016	-0.014	-0.020%
insert_adv	5.0	62.0	-3.2	-4.908%	50.294	-2.666	-5.034%	68.911	-1.119	-1.598%
append_irr	5.0	61.15	-4.05	-6.212%	48.37	-4.59	-8.667%	64.102	-5.928	-8.465%
random_word_insert	5.0	58.49	-6.71	-10.291%	37.407	-15.553	-29.368%	65.566	-4.464	-6.374%
drop_nn	5.0	45.44	-19.76	-30.307%	32.644	-20.316	-38.360%	63.801	-6.229	-8.895%
drop_rand_one_nn	5.0	57.06	-8.14	-12.485%	44.872	-8.088	-15.272%	68.667	-1.363	-1.947%
drop_vb	5.0	59.61	-5.59	-8.574%	38.289	-14.671	-27.702%	67.231	-2.799	-3.997%
drop_vb_nn	5.0	46.1	-19.1	-29.294%	22.619	-30.341	-57.291%	60.801	-9.229	-13.179%
only_nn	5.0	34.27	-30.93	-47.439%	12.22	-40.74	-76.926%	56.193	-13.837	-19.758%
only_vb	5.0	52.86	-12.34	-18.926%	39.005	-13.955	-26.351%	65.337	-4.693	-6.702%
only_vb_nn	5.0	44.08	-21.12	-32.393%	30.522	-22.438	-42.369%	58.605	-11.425	-16.315%
drop_rand_one_vb	5.0	63.06	-2.14	-3.282%	46.112	-6.848	-12.930%	68.293	-1.737	-2.480%
drop_first	5.0	60.34	-4.86	-7.454%	43.187	-9.773	-18.454%	68.609	-1.421	-2.029%
drop_last	5.0	54.14	-11.06	-16.963%	46.08	-6.88	-12.990%	67.547	-2.483	-3.546%
drop_first_and_last	5.0	46.95	-18.25	-27.991%	34.68	-18.28	-34.517%	66.413	-3.617	-5.165%
shuffle_order	5.0	58.03	-7.17	-10.997%	40.698	-12.262	-23.153%	64.791	-5.239	-7.481%
random_word_delete	5.0	45.05	-20.15	-30.905%	30.243	-22.717	-42.894%	62.523	-7.507	-10.719%
swap_syn_word_emb	5.0	45.89	-19.31	-29.617%	33.026	-19.934	-37.640%	57.442	-12.588	-17.975%
swap_syn_word_net	5.0	47.68	-17.52	-26.871%	35.292	-17.668	-33.361%	57.93	-12.1	-17.278%
back_trans	5.0	61.61	-3.59	-5.506%	49.61	-3.35	-6.325%	68.81	-1.22	-1.742%
random_word_swap	5.0	61.69	-3.51	-5.383%	45.937	-7.023	-13.260%	67.762	-2.268	-3.238%
nonsense	5.0	11.67	-53.53	-82.101%	7.457	-45.503	-85.919%	51.285	-18.745	-26.768%

Table 31: Performance and decrease ratio of Hyperformer on CLIP-BART against text corruptions given severity 1 to 4.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	1.0	54.68	-10.7	-16.366%	42.821	-9.699	-18.468%	56.94	-15.27	-21.147%
typos	1.0	56.24	-9.14	-13.980%	45.047	-7.473	-14.229%	69.772	-2.438	-3.377%
keyboard	1.0	55.04	-10.34	-15.815%	43.95	-8.57	-16.318%	69.198	-3.012	-4.172%
spell_error	1.0	55.72	-9.66	-14.775%	44.753	-7.767	-14.789%	69.241	-2.969	-4.112%
random_char_insert	1.0	51.13	-14.25	-21.796%	35.983	-16.537	-31.486%	63.815	-8.395	-11.626%
random_char_replace	1.0	47.55	-17.83	-27.271%	31.825	-20.695	-39.403%	62.007	-10.203	-14.130%
random_char_swap	1.0	41.02	-24.36	-37.259%	26.244	-26.276	-50.030%	57.04	-15.17	-21.008%
random_char_delete	1.0	49.05	-16.33	-24.977%	34.449	-18.071	-34.408%	63.241	-8.969	-12.421%
random_word_insert	1.0	65.32	-0.06	-0.092%	50.636	-1.884	-3.587%	71.652	-0.558	-0.773%
random_word_delete	1.0	65.21	-0.17	-0.260%	51.36	-1.16	-2.210%	71.681	-0.529	-0.733%
swap_syn_word_emb	1.0	55.18	-10.2	-15.601%	45.5	-7.02	-13.366%	67.317	-4.893	-6.776%
swap_syn_word_net	1.0	57.82	-7.56	-11.563%	46.128	-6.392	-12.170%	69.427	-2.783	-3.854%
random_word_swap	1.0	65.28	-0.1	-0.153%	51.725	-0.795	-1.513%	71.781	-0.429	-0.594%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	2.0	53.7	-11.68	-17.865%	39.307	-13.213	-25.159%	65.308	-6.902	-9.558%
typos	2.0	54.86	-10.52	-16.091%	41.048	-11.472	-21.843%	66.169	-6.041	-8.366%
keyboard	2.0	54.58	-10.8	-16.519%	40.269	-12.251	-23.327%	66.557	-5.653	-7.829%
spell_error	2.0	55.08	-10.3	-15.754%	42.217	-10.303	-19.618%	65.624	-6.586	-9.121%
random_char_insert	2.0	41.12	-24.26	-37.106%	25.529	-26.991	-51.392%	57.744	-14.466	-20.034%
random_char_replace	2.0	36.76	-28.62	-43.775%	22.571	-29.949	-57.024%	55.935	-16.275	-22.538%
random_char_swap	2.0	31.93	-33.45	-51.162%	19.868	-32.652	-62.171%	52.82	-19.39	-26.852%
random_char_delete	2.0	38.54	-26.84	-41.052%	25.401	-27.119	-51.635%	56.768	-15.442	-21.385%
random_word_insert	2.0	63.6	-1.78	-2.723%	46.947	-5.573	-10.611%	70.26	-1.95	-2.701%
random_word_delete	2.0	59.43	-5.95	-9.101%	46.454	-6.066	-11.550%	68.911	-3.299	-4.569%
swap_syn_word_emb	2.0	54.64	-10.74	-16.427%	42.391	-10.129	-19.285%	62.466	-9.744	-13.494%
swap_syn_word_net	2.0	57.61	-7.77	-11.884%	44.292	-8.228	-15.667%	67.002	-5.208	-7.213%
random_word_swap	2.0	64.03	-1.35	-2.065%	49.428	-3.092	-5.888%	71.193	-1.017	-1.409%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	3.0	49.21	-16.17	-24.732%	32.509	-20.011	-38.101%	61.648	-10.562	-14.627%
typos	3.0	50.18	-15.2	-23.249%	34.958	-17.562	-33.439%	63.528	-8.682	-12.023%
keyboard	3.0	48.68	-16.7	-25.543%	33.09	-19.43	-36.996%	62.308	-9.902	-13.713%
spell_error	3.0	50.07	-15.31	-23.417%	35.165	-17.355	-33.045%	62.466	-9.744	-13.494%
random_char_insert	3.0	33.75	-31.63	-48.379%	21.506	-31.014	-59.052%	54.299	-17.911	-24.804%
random_char_replace	3.0	30.61	-34.77	-53.181%	19.9	-32.62	-62.110%	51.687	-20.523	-28.422%
random_char_swap	3.0	28.17	-37.21	-56.913%	18.031	-34.489	-65.667%	50.954	-21.256	-29.436%
random_char_delete	3.0	32.97	-32.41	-49.572%	20.822	-31.698	-60.354%	53.997	-18.213	-25.222%
random_word_insert	3.0	61.46	-3.92	-5.996%	42.439	-10.081	-19.194%	67.949	-4.261	-5.901%
random_word_delete	3.0	56.52	-8.86	-13.552%	42.924	-9.596	-18.271%	67.059	-5.151	-7.133%
swap_syn_word_emb	3.0	50.61	-14.77	-22.591%	37.001	-15.519	-29.549%	60.299	-11.911	-16.496%
swap_syn_word_net	3.0	53.92	-11.46	-17.528%	40.022	-12.498	-23.796%	63.37	-8.84	-12.242%
random_word_swap	3.0	63.19	-2.19	-3.350%	48.267	-4.253	-8.098%	70.418	-1.792	-2.482%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	3.0	49.21	-16.17	-24.732%	32.509	-20.011	-38.101%	61.648	-10.562	-14.627%
typos	3.0	50.18	-15.2	-23.249%	34.958	-17.562	-33.439%	63.528	-8.682	-12.023%
keyboard	3.0	48.68	-16.7	-25.543%	33.09	-19.43	-36.996%	62.308	-9.902	-13.713%
spell_error	3.0	50.07	-15.31	-23.417%	35.165	-17.355	-33.045%	62.466	-9.744	-13.494%
random_char_insert	3.0	33.75	-31.63	-48.379%	21.506	-31.014	-59.052%	54.299	-17.911	-24.804%
random_char_replace	3.0	30.61	-34.77	-53.181%	19.9	-32.62	-62.110%	51.687	-20.523	-28.422%
random_char_swap	3.0	28.17	-37.21	-56.913%	18.031	-34.489	-65.667%	50.954	-21.256	-29.436%
random_char_delete	3.0	32.97	-32.41	-49.572%	20.822	-31.698	-60.354%	53.997	-18.213	-25.222%
random_word_insert	3.0	61.46	-3.92	-5.996%	42.439	-10.081	-19.194%	67.949	-4.261	-5.901%
random_word_delete	3.0	56.52	-8.86	-13.552%	42.924	-9.596	-18.271%	67.059	-5.151	-7.133%
swap_syn_word_emb	3.0	50.61	-14.77	-22.591%	37.001	-15.519	-29.549%	60.299	-11.911	-16.496%
swap_syn_word_net	3.0	53.92	-11.46	-17.528%	40.022	-12.498	-23.796%	63.37	-8.84	-12.242%
random_word_swap	3.0	63.19	-2.19	-3.350%	48.267	-4.253	-8.098%	70.418	-1.792	-2.482%

Table 32: Performance and decrease ratio of Hyperformer on CLIP-BART against text corruptions given severity 5.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	5.0	39.58	-25.8	-39.462%	24.948	-27.572	-52.497%	54.729	-17.481	-24.208%
punctuation	5.0	64.57	-0.81	-1.239%	51.304	-1.216	-2.316%	71.509	-0.701	-0.971%
typos	5.0	29.88	-35.5	-54.298%	19.924	-32.596	-62.065%	51.73	-20.48	-28.362%
keyboard	5.0	27.13	-38.25	-58.504%	18.898	-33.622	-64.017%	50.969	-21.241	-29.416%
spell_error	5.0	34.74	-30.64	-46.864%	24.67	-27.85	-53.027%	55.031	-17.179	-23.791%
random_char_insert	5.0	27.42	-37.96	-58.061%	18.747	-33.773	-64.305%	51.184	-21.026	-29.118%
random_char_replace	5.0	25.64	-39.74	-60.783%	18.286	-34.234	-65.183%	50.165	-22.045	-30.529%
random_char_swap	5.0	25.53	-39.85	-60.951%	18.58	-33.94	-64.623%	51.242	-20.968	-29.038%
random_char_delete	5.0	27.21	-38.17	-58.382%	17.825	-34.695	-66.061%	51.572	-20.638	-28.581%
to_passive	5.0	62.96	-2.42	-3.701%	47.209	-5.311	-10.112%	68.882	-3.328	-4.609%
tense	5.0	64.51	-0.87	-1.331%	52.425	-0.095	-0.181%	72.14	-0.07	-0.097%
to_formal	5.0	64.84	-0.54	-0.826%	51.948	-0.572	-1.089%	71.681	-0.529	-0.733%
to_casual	5.0	62.6	-2.78	-4.252%	47.83	-4.69	-8.931%	70.174	-2.036	-2.820%
to_active	5.0	63.74	-1.64	-2.508%	50.223	-2.297	-4.374%	70.834	-1.376	-1.906%
double_denial	5.0	65.27	-0.11	-0.168%	52.504	-0.016	-0.030%	72.198	-0.012	-0.017%
insert_adv	5.0	62.02	-3.36	-5.139%	49.523	-2.997	-5.706%	70.949	-1.261	-1.747%
append_irr	5.0	61.82	-3.56	-5.445%	46.446	-6.074	-11.565%	66.083	-6.127	-8.485%
random_word_insert	5.0	54.55	-10.83	-16.565%	34.576	-17.944	-34.166%	62.179	-10.031	-13.892%
drop_nn	5.0	44.68	-20.7	-31.661%	33.567	-18.953	-36.088%	61.289	-10.921	-15.124%
drop_rand_one_nn	5.0	56.79	-8.59	-13.139%	44.641	-7.879	-15.001%	70.533	-1.677	-2.323%
drop_vb	5.0	58.74	-6.64	-10.156%	41.779	-10.741	-20.451%	68.437	-3.773	-5.225%
drop_vb_nn	5.0	44.4	-20.98	-32.089%	30.601	-21.919	-41.734%	57.471	-14.739	-20.411%
only_nn	5.0	31.7	-33.68	-51.514%	20.711	-31.809	-60.566%	50.911	-21.299	-29.495%
only_vb	5.0	50.58	-14.8	-22.637%	37.844	-14.676	-27.944%	65.164	-7.046	-9.757%
only_vb_nn	5.0	33.83	-31.55	-48.256%	22.794	-29.726	-56.600%	52.663	-19.547	-27.070%
drop_rand_one_vb	5.0	62.77	-2.61	-3.992%	47.822	-4.698	-8.946%	71.049	-1.161	-1.607%
drop_first	5.0	55.2	-10.18	-15.571%	44.848	-7.672	-14.607%	70.834	-1.376	-1.906%
drop_last	5.0	53.48	-11.9	-18.201%	45.762	-6.758	-12.867%	68.911	-3.299	-4.569%
drop_first_and_last	5.0	41.86	-23.52	-35.974%	37.542	-14.978	-28.519%	66.097	-6.113	-8.465%
shuffle_order	5.0	57.24	-8.14	-12.450%	40.897	-11.623	-22.131%	68.179	-4.031	-5.583%
random_word_delete	5.0	44.82	-20.56	-31.447%	31.921	-20.599	-39.222%	63.083	-9.127	-12.639%
swap_syn_word_emb	5.0	46.01	-19.37	-29.627%	33.543	-18.977	-36.133%	58.576	-13.634	-18.881%
swap_syn_word_net	5.0	47.69	-17.69	-27.057%	36.294	-16.226	-30.896%	57.988	-14.222	-19.696%
back_trans	5.0	61.92	-3.46	-5.292%	49.579	-2.941	-5.600%	71.207	-1.003	-1.389%
random_word_swap	5.0	61.94	-3.44	-5.262%	46.335	-6.185	-11.777%	70.102	-2.108	-2.919%
nonsense	5.0	8.62	-56.76	-86.816%	13.905	-38.615	-73.524%	51.801	-20.409	-28.263%

Table 33: Performance and decrease ratio of Multiple Adapters on CLIP-BART against text corruptions given severity 1 to 4.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	1.0	54.59	-10.71	-16.401%	41.747	-11.643	-21.807%	54.758	-14.652	-21.109%
typos	1.0	56.65	-8.65	-13.247%	43.457	-9.933	-18.605%	67.389	-2.021	-2.912%
keyboard	1.0	55.55	-9.75	-14.931%	42.272	-11.118	-20.824%	67.619	-1.791	-2.581%
spell_error	1.0	56.09	-9.21	-14.104%	44.021	-9.369	-17.548%	66.987	-2.423	-3.491%
random_char_insert	1.0	51.31	-13.99	-21.424%	35.681	-17.709	-33.168%	62.337	-7.073	-10.191%
random_char_replace	1.0	47.81	-17.49	-26.784%	32.183	-21.207	-39.721%	59.782	-9.628	-13.871%
random_char_swap	1.0	41.08	-24.22	-37.090%	26.045	-27.345	-51.217%	56.466	-12.944	-18.648%
random_char_delete	1.0	49.7	-15.6	-23.890%	33.209	-20.181	-37.800%	61.519	-7.891	-11.369%
random_word_insert	1.0	65.27	-0.03	-0.046%	49.825	-3.565	-6.677%	70.174	0.764	1.100%
random_word_delete	1.0	65.12	-0.18	-0.276%	50.453	-2.937	-5.501%	69.571	0.161	0.232%
swap_syn_word_emb	1.0	55.66	-9.64	-14.763%	44.188	-9.202	-17.235%	65.337	-4.073	-5.869%
swap_syn_word_net	1.0	58.23	-7.07	-10.827%	44.49	-8.9	-16.669%	67.375	-2.035	-2.932%
random_word_swap	1.0	65.21	-0.09	-0.138%	50.755	-2.635	-4.935%	70.044	0.634	0.914%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	2.0	54.06	-11.24	-17.213%	38.122	-15.268	-28.597%	63.227	-6.183	-8.908%
typos	2.0	55.31	-9.99	-15.299%	39.959	-13.431	-25.157%	64.49	-4.92	-7.089%
keyboard	2.0	54.76	-10.54	-16.141%	38.774	-14.616	-27.376%	63.844	-5.566	-8.019%
spell_error	2.0	55.47	-9.83	-15.054%	41.278	-12.112	-22.685%	64.605	-4.805	-6.923%
random_char_insert	2.0	41.08	-24.22	-37.090%	25.863	-27.527	-51.559%	56.423	-12.987	-18.710%
random_char_replace	2.0	36.94	-28.36	-43.430%	22.786	-30.604	-57.322%	54.902	-14.508	-20.902%
random_char_swap	2.0	32.02	-33.28	-50.965%	20.075	-33.315	-62.400%	52.002	-17.408	-25.080%
random_char_delete	2.0	38.7	-26.6	-40.735%	24.614	-28.776	-53.897%	56.495	-12.915	-18.607%
random_word_insert	2.0	64.55	-0.75	-1.149%	46.041	-7.349	-13.765%	69.356	-0.054	-0.078%
random_word_delete	2.0	60.42	-4.88	-7.473%	45.111	-8.279	-15.508%	67.863	-1.547	-2.229%
swap_syn_word_emb	2.0	54.89	-10.41	-15.942%	41.445	-11.945	-22.372%	61.935	-7.475	-10.770%
swap_syn_word_net	2.0	57.6	-7.7	-11.792%	42.495	-10.895	-20.407%	64.432	-4.978	-7.171%
random_word_swap	2.0	64.07	-1.23	-1.884%	48.45	-4.94	-9.253%	69.198	-0.212	-0.306%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	3.0	49.47	-15.83	-24.242%	31.086	-22.304	-41.776%	58.418	-10.992	-15.836%
typos	3.0	50.77	-14.53	-22.251%	33.249	-20.141	-37.725%	61.806	-7.604	-10.956%
keyboard	3.0	49.31	-15.99	-24.487%	31.865	-21.525	-40.316%	60.227	-9.183	-13.230%
spell_error	3.0	50.5	-14.8	-22.665%	34.719	-18.671	-34.970%	61.676	-7.734	-11.142%
random_char_insert	3.0	34.33	-30.97	-47.427%	21.72	-31.67	-59.317%	52.964	-16.446	-23.694%
random_char_replace	3.0	30.93	-34.37	-52.634%	19.518	-33.872	-63.442%	51.687	-17.723	-25.534%
random_char_swap	3.0	28.1	-37.2	-56.968%	18.111	-35.279	-66.078%	50.61	-18.8	-27.085%
random_char_delete	3.0	33.59	-31.71	-48.560%	20.87	-32.52	-60.911%	52.677	-16.733	-24.108%
random_word_insert	3.0	63.74	-1.56	-2.389%	42.654	-10.736	-20.109%	68.652	-0.758	-1.092%
random_word_delete	3.0	57.76	-7.54	-11.547%	41.151	-12.239	-22.923%	65.38	-4.03	-5.807%
swap_syn_word_emb	3.0	51.29	-14.01	-21.455%	36.524	-16.866	-31.590%	58.849	-10.561	-15.216%
swap_syn_word_net	3.0	54.43	-10.87	-16.646%	37.248	-16.142	-30.235%	61.834	-7.576	-10.914%
random_word_swap	3.0	63.46	-1.84	-2.818%	46.478	-6.912	-12.946%	69.068	-0.342	-0.492%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	4.0	42.33	-22.97	-35.176%	25.648	-27.742	-51.961%	54.586	-14.824	-21.357%
typos	4.0	41.86	-23.44	-35.896%	26.92	-26.47	-49.579%	58.059	-11.351	-16.353%
keyboard	4.0	39.79	-25.51	-39.066%	24.805	-28.585	-53.540%	57.055	-12.355	-17.800%
spell_error	4.0	42.07	-23.23	-35.574%	28.121	-25.269	-47.330%	57.313	-12.097	-17.428%
random_char_insert	4.0	30.15	-35.15	-53.828%	19.351	-34.039	-63.755%	51.658	-17.752	-25.576%
random_char_replace	4.0	28.39	-36.91	-56.524%	18.175	-35.215	-65.959%	51.242	-18.168	-26.176%
random_char_swap	4.0	26.51	-38.79	-59.403%	17.944	-35.446	-66.391%	50.309	-19.101	-27.520%
random_char_delete	4.0	30.31	-34.99	-53.583%	18.532	-34.858	-65.289%	51.643	-17.767	-25.597%
random_word_insert	4.0	61.74	-3.56	-5.452%	39.331	-14.059	-26.333%	67.633	-1.777	-2.560%
random_word_delete	4.0	51.76	-13.54	-20.735%	35.403	-17.987	-33.690%	63.571	-5.839	-8.412%
swap_syn_word_emb	4.0	47.52	-17.78	-27.228%	33.63	-19.76	-37.010%	57.83	-11.58	-16.684%
swap_syn_word_net	4.0	50.68	-14.62	-22.389%	34.616	-18.774	-35.164%	58.662	-10.748	-15.484%
random_word_swap	4.0	62.58	-2.72	-4.165%	45.373	-8.017	-15.016%	68.179	-1.231	-1.774%

Table 34: Performance and decrease ratio of Multiple Adapters on CLIP-BART against text corruptions given severity 5.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	5.0	39.27	-26.03	-39.862%	23.064	-30.326	-56.801%	52.993	-16.417	-23.653%
punctuation	5.0	64.64	-0.66	-1.011%	50.89	-2.5	-4.682%	69.155	-0.255	-0.368%
typos	5.0	29.45	-35.85	-54.900%	19.741	-33.649	-63.025%	51.328	-18.082	-26.051%
keyboard	5.0	27.31	-37.99	-58.178%	17.896	-35.494	-66.480%	50.624	-18.786	-27.065%
spell_error	5.0	35.0	-30.3	-46.401%	24.217	-29.173	-54.642%	54.615	-14.795	-21.316%
random_char_insert	5.0	27.68	-37.62	-57.611%	18.524	-34.866	-65.304%	50.28	-19.13	-27.561%
random_char_replace	5.0	26.9	-38.4	-58.806%	17.642	-35.748	-66.957%	50.337	-19.073	-27.478%
random_char_swap	5.0	26.1	-39.2	-60.031%	18.755	-34.635	-64.872%	51.242	-18.168	-26.176%
random_char_delete	5.0	27.47	-37.83	-57.933%	18.008	-35.382	-66.272%	51.256	-18.154	-26.155%
to_passive	5.0	62.59	-2.71	-4.150%	45.126	-8.264	-15.478%	68.092	-1.318	-1.898%
tense	5.0	64.64	-0.66	-1.011%	51.463	-1.927	-3.610%	69.844	0.434	0.625%
to_formal	5.0	64.91	-0.39	-0.597%	50.962	-2.428	-4.548%	69.6	0.19	0.273%
to_casual	5.0	62.02	-3.28	-5.023%	46.629	-6.761	-12.663%	68.193	-1.217	-1.753%
to_active	5.0	63.62	-1.68	-2.573%	48.792	-4.598	-8.613%	68.939	-0.471	-0.678%
double_denial	5.0	65.27	-0.03	-0.046%	51.725	-1.665	-3.118%	70.03	0.62	0.893%
insert_adv	5.0	60.92	-4.38	-6.708%	48.259	-5.131	-9.611%	68.868	-0.542	-0.782%
append_irr	5.0	58.2	-7.1	-10.873%	45.588	-7.802	-14.614%	63.514	-5.896	-8.495%
random_word_insert	5.0	58.78	-6.52	-9.985%	34.322	-19.068	-35.715%	67.403	-2.007	-2.891%
drop_nn	5.0	45.5	-19.8	-30.322%	32.08	-21.31	-39.914%	63.7	-5.71	-8.226%
drop_rand_one_nn	5.0	57.31	-7.99	-12.236%	44.053	-9.337	-17.488%	68.982	-0.428	-0.616%
drop_vb	5.0	59.56	-5.74	-8.790%	40.619	-12.771	-23.921%	67.346	-2.064	-2.974%
drop_vb_nn	5.0	46.33	-18.97	-29.051%	28.685	-24.705	-46.273%	61.935	-7.475	-10.770%
only_nn	5.0	35.72	-29.58	-45.299%	14.947	-38.443	-72.005%	57.873	-11.537	-16.622%
only_vb	5.0	52.14	-13.16	-20.153%	36.262	-17.128	-32.081%	64.82	-4.59	-6.613%
only_vb_nn	5.0	41.2	-24.1	-36.907%	25.37	-28.02	-52.482%	59.15	-10.26	-14.781%
drop_rand_one_vb	5.0	63.54	-1.76	-2.695%	45.731	-7.659	-14.346%	68.824	-0.586	-0.844%
drop_first	5.0	60.76	-4.54	-6.953%	42.495	-10.895	-20.407%	68.609	-0.801	-1.154%
drop_last	5.0	54.49	-10.81	-16.554%	44.141	-9.249	-17.324%	67.045	-2.365	-3.408%
drop_first_and_last	5.0	47.37	-17.93	-27.458%	37.542	-15.848	-29.684%	66.399	-3.011	-4.338%
shuffle_order	5.0	57.98	-7.32	-11.210%	37.717	-15.673	-29.356%	65.695	-3.715	-5.352%
random_word_delete	5.0	46.07	-19.23	-29.449%	29.997	-23.393	-43.816%	62.437	-6.973	-10.046%
swap_syn_word_emb	5.0	46.71	-18.59	-28.469%	32.962	-20.428	-38.261%	56.796	-12.614	-18.173%
swap_syn_word_net	5.0	47.98	-17.32	-26.524%	34.385	-19.005	-35.596%	57.399	-12.011	-17.304%
back_trans	5.0	61.77	-3.53	-5.406%	48.116	-5.274	-9.879%	69.14	-0.27	-0.389%
random_word_swap	5.0	61.96	-3.34	-5.115%	44.037	-9.353	-17.518%	67.36	-2.05	-2.953%
nonsense	5.0	24.34	-40.96	-62.726%	16.736	-36.654	-68.654%	51.443	-17.967	-25.886%

Table 35: Performance and decrease ratio of Multiple Compacters on CLIP-BART against text corruptions given severity 1 to 4.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	1.0	53.92	-10.99	-16.931%	42.026	-10.724	-20.330%	55.964	-13.486	-19.419%
typos	1.0	56.2	-8.71	-13.419%	44.125	-8.625	-16.351%	67.303	-2.147	-3.091%
keyboard	1.0	54.99	-9.92	-15.283%	43.091	-9.659	-18.311%	67.375	-2.075	-2.988%
spell_error	1.0	55.79	-9.12	-14.050%	44.244	-8.506	-16.125%	67.073	-2.377	-3.422%
random_char_insert	1.0	50.54	-14.37	-22.138%	35.244	-17.506	-33.187%	62.236	-7.214	-10.387%
random_char_replace	1.0	47.13	-17.78	-27.392%	32.104	-20.646	-39.140%	60.241	-9.209	-13.260%
random_char_swap	1.0	40.85	-24.06	-37.067%	25.918	-26.832	-50.866%	55.792	-13.658	-19.667%
random_char_delete	1.0	48.7	-16.21	-24.973%	33.439	-19.311	-36.608%	60.758	-8.692	-12.516%
random_word_insert	1.0	64.94	0.03	0.046%	50.692	-2.058	-3.902%	69.226	-0.224	-0.322%
random_word_delete	1.0	64.79	-0.12	-0.185%	51.248	-1.502	-2.847%	68.982	-0.468	-0.673%
swap_syn_word_emb	1.0	55.51	-9.4	-14.482%	44.912	-7.838	-14.859%	65.337	-4.113	-5.923%
swap_syn_word_net	1.0	57.54	-7.37	-11.354%	45.103	-7.647	-14.498%	67.289	-2.161	-3.112%
random_word_swap	1.0	64.82	-0.09	-0.139%	51.741	-1.009	-1.913%	69.327	-0.123	-0.177%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	2.0	53.54	-11.37	-17.517%	38.361	-14.389	-27.278%	63.169	-6.281	-9.044%
typos	2.0	54.82	-10.09	-15.545%	40.157	-12.593	-23.872%	64.361	-5.089	-7.328%
keyboard	2.0	54.43	-10.48	-16.145%	39.736	-13.014	-24.671%	64.102	-5.348	-7.700%
spell_error	2.0	54.95	-9.96	-15.344%	41.414	-11.336	-21.491%	64.274	-5.176	-7.452%
random_char_insert	2.0	40.57	-24.34	-37.498%	25.791	-26.959	-51.107%	56.323	-13.127	-18.902%
random_char_replace	2.0	36.4	-28.51	-43.922%	22.786	-29.964	-56.804%	54.787	-14.663	-21.113%
random_char_swap	2.0	31.96	-32.95	-50.763%	19.423	-33.327	-63.180%	52.074	-17.376	-25.019%
random_char_delete	2.0	38.32	-26.59	-40.964%	24.591	-28.159	-53.383%	56.538	-12.912	-18.592%
random_word_insert	2.0	64.31	-0.6	-0.924%	47.233	-5.517	-10.458%	68.767	-0.683	-0.983%
random_word_delete	2.0	59.42	-5.49	-8.458%	45.134	-7.616	-14.437%	67.375	-2.075	-2.988%
swap_syn_word_emb	2.0	54.98	-9.93	-15.298%	42.391	-10.359	-19.637%	61.418	-8.032	-11.565%
swap_syn_word_net	2.0	56.96	-7.95	-12.248%	42.884	-9.866	-18.703%	64.662	-4.788	-6.894%
random_word_swap	2.0	63.68	-1.23	-1.895%	49.189	-3.561	-6.751%	68.968	-0.482	-0.694%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	3.0	48.87	-16.04	-24.711%	31.595	-21.155	-40.105%	59.265	-10.185	-14.665%
typos	3.0	50.18	-14.73	-22.693%	33.741	-19.009	-36.035%	61.016	-8.434	-12.144%
keyboard	3.0	48.88	-16.03	-24.696%	32.446	-20.304	-38.492%	60.227	-9.223	-13.280%
spell_error	3.0	49.82	-15.09	-23.248%	34.735	-18.015	-34.151%	60.657	-8.793	-12.660%
random_char_insert	3.0	33.67	-31.24	-48.128%	21.482	-31.268	-59.276%	54.012	-15.438	-22.229%
random_char_replace	3.0	30.79	-34.12	-52.565%	19.614	-33.136	-62.818%	53.064	-16.386	-23.593%
random_char_swap	3.0	28.51	-36.4	-56.078%	16.903	-35.847	-67.957%	51.242	-18.208	-26.218%
random_char_delete	3.0	32.61	-32.3	-49.761%	20.027	-32.723	-62.034%	52.892	-16.558	-23.841%
random_word_insert	3.0	63.9	-1.01	-1.556%	44.045	-8.705	-16.502%	67.834	-1.616	-2.327%
random_word_delete	3.0	56.79	-8.12	-12.510%	40.237	-12.513	-23.721%	65.164	-4.286	-6.171%
swap_syn_word_emb	3.0	51.14	-13.77	-21.214%	36.834	-15.916	-30.172%	58.906	-10.544	-15.182%
swap_syn_word_net	3.0	53.25	-11.66	-17.963%	37.772	-14.978	-28.394%	61.605	-7.845	-11.296%
random_word_swap	3.0	63.16	-1.75	-2.696%	47.567	-5.183	-9.825%	68.494	-0.956	-1.376%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	4.0	41.92	-22.99	-35.418%	25.934	-26.816	-50.836%	55.792	-13.658	-19.667%
typos	4.0	41.66	-23.25	-35.819%	27.604	-25.146	-47.671%	57.873	-11.577	-16.670%
keyboard	4.0	39.29	-25.62	-39.470%	25.688	-27.062	-51.303%	56.882	-12.568	-18.096%
spell_error	4.0	41.32	-23.59	-36.343%	28.979	-23.771	-45.063%	57.012	-12.438	-17.910%
random_char_insert	4.0	30.03	-34.88	-53.736%	18.795	-33.955	-64.370%	52.246	-17.204	-24.771%
random_char_replace	4.0	28.09	-36.82	-56.725%	17.077	-35.673	-67.626%	51.328	-18.122	-26.094%
random_char_swap	4.0	26.72	-38.19	-58.835%	15.599	-37.151	-70.429%	51.313	-18.137	-26.115%
random_char_delete	4.0	29.35	-35.56	-54.784%	17.523	-35.227	-66.782%	52.017	-17.433	-25.102%
random_word_insert	4.0	62.39	-2.52	-3.882%	42.073	-10.677	-20.240%	67.748	-1.702	-2.451%
random_word_delete	4.0	50.93	-13.98	-21.538%	34.823	-17.927	-33.985%	63.04	-6.41	-9.230%
swap_syn_word_emb	4.0	47.52	-17.39	-26.791%	34.568	-18.182	-34.468%	57.801	-11.649	-16.773%
swap_syn_word_net	4.0	49.86	-15.05	-23.186%	34.878	-17.872	-33.880%	59.323	-10.127	-14.582%
random_word_swap	4.0	62.66	-2.25	-3.466%	46.526	-6.224	-11.800%	68.265	-1.185	-1.707%

Table 36: Performance and decrease ratio of Multiple Compacters on CLIP-BART against text corruptions given severity 5.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	5.0	38.61	-26.3	-40.518%	23.422	-29.328	-55.598%	53.538	-15.912	-22.911%
punctuation	5.0	64.59	-0.32	-0.493%	51.685	-1.065	-2.018%	68.997	-0.453	-0.653%
typos	5.0	29.7	-35.21	-54.244%	19.645	-33.105	-62.758%	51.486	-17.964	-25.867%
keyboard	5.0	27.11	-37.8	-58.234%	18.564	-34.186	-64.807%	50.768	-18.682	-26.900%
spell_error	5.0	34.81	-30.1	-46.372%	24.964	-27.786	-52.674%	54.385	-15.065	-21.692%
random_char_insert	5.0	27.63	-37.28	-57.433%	17.888	-34.862	-66.088%	51.17	-18.28	-26.321%
random_char_replace	5.0	26.65	-38.26	-58.943%	16.64	-36.11	-68.455%	50.782	-18.668	-26.879%
random_char_swap	5.0	26.26	-38.65	-59.544%	16.298	-36.452	-69.103%	52.045	-17.405	-25.061%
random_char_delete	5.0	27.34	-37.57	-57.880%	16.107	-36.643	-69.464%	51.356	-18.094	-26.053%
to_passive	5.0	62.46	-2.45	-3.774%	43.067	-9.683	-18.356%	67.317	-2.133	-3.071%
tense	5.0	64.12	-0.79	-1.217%	52.473	-0.277	-0.526%	69.241	-0.209	-0.301%
to_formal	5.0	64.44	-0.47	-0.724%	51.932	-0.818	-1.551%	69.628	0.178	0.257%
to_casual	5.0	62.14	-2.77	-4.267%	45.707	-7.043	-13.352%	67.877	-1.573	-2.265%
to_active	5.0	63.37	-1.54	-2.373%	48.887	-3.863	-7.323%	68.753	-0.697	-1.004%
double_denial	5.0	64.82	-0.09	-0.139%	52.719	-0.031	-0.059%	69.442	-0.008	-0.012%
insert_adv	5.0	61.69	-3.22	-4.961%	49.443	-3.307	-6.268%	68.078	-1.372	-1.975%
append_irr	5.0	61.1	-3.81	-5.870%	46.995	-5.755	-10.910%	63.585	-5.865	-8.444%
random_word_insert	5.0	60.19	-4.72	-7.272%	37.216	-15.534	-29.449%	67.059	-2.391	-3.443%
drop_nn	5.0	46.48	-18.43	-28.393%	32.485	-20.265	-38.417%	63.643	-5.807	-8.362%
drop_rand_one_nn	5.0	56.9	-8.01	-12.340%	44.467	-8.283	-15.703%	68.638	-0.812	-1.169%
drop_vb	5.0	60.37	-4.54	-6.994%	34.91	-17.84	-33.820%	67.906	-1.544	-2.223%
drop_vb_nn	5.0	47.84	-17.07	-26.298%	23.271	-29.479	-55.885%	61.964	-7.486	-10.780%
only_nn	5.0	35.98	-28.93	-44.569%	16.314	-36.436	-69.073%	57.758	-11.692	-16.835%
only_vb	5.0	52.59	-12.32	-18.980%	38.909	-13.841	-26.238%	64.906	-4.544	-6.543%
only_vb_nn	5.0	41.42	-23.49	-36.189%	31.515	-21.235	-40.255%	60.442	-9.008	-12.970%
drop_rand_one_vb	5.0	63.62	-1.29	-1.987%	41.907	-10.843	-20.556%	68.236	-1.214	-1.748%
drop_first	5.0	58.62	-6.29	-9.690%	37.971	-14.779	-28.017%	68.322	-1.128	-1.624%
drop_last	5.0	54.76	-10.15	-15.637%	46.041	-6.709	-12.719%	67.777	-1.673	-2.409%
drop_first_and_last	5.0	45.91	-19.0	-29.271%	33.201	-19.549	-37.060%	66.298	-3.152	-4.538%
shuffle_order	5.0	57.91	-7.0	-10.784%	39.362	-13.388	-25.379%	64.992	-4.458	-6.419%
random_word_delete	5.0	45.22	-19.69	-30.334%	29.059	-23.691	-44.912%	61.72	-7.73	-11.131%
swap_syn_word_emb	5.0	46.64	-18.27	-28.147%	33.527	-19.223	-36.442%	57.17	-12.28	-17.682%
swap_syn_word_net	5.0	46.98	-17.93	-27.623%	33.487	-19.263	-36.517%	57.227	-12.223	-17.600%
back_trans	5.0	61.57	-3.34	-5.146%	49.149	-3.601	-6.826%	68.451	-0.999	-1.438%
random_word_swap	5.0	61.73	-3.18	-4.899%	45.047	-7.703	-14.603%	66.628	-2.822	-4.063%
nonsense	5.0	18.95	-45.96	-70.806%	4.023	-48.727	-92.374%	51.012	-18.438	-26.549%

Table 37: Performance and decrease ratio of Multiple LoRA on CLIP-BART against text corruptions given severity 1 to 4.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	1.0	53.63	-11.81	-18.047%	41.469	-10.581	-20.328%	51.213	-0.107	-0.209%
typos	1.0	55.85	-9.59	-14.655%	43.282	-8.768	-16.845%	51.084	-0.236	-0.460%
keyboard	1.0	54.8	-10.64	-16.259%	42.225	-9.825	-18.877%	51.17	-0.15	-0.293%
spell_error	1.0	55.58	-9.86	-15.067%	44.021	-8.029	-15.425%	51.055	-0.265	-0.516%
random_char_insert	1.0	50.71	-14.73	-22.509%	34.473	-17.577	-33.770%	51.428	0.108	0.211%
random_char_replace	1.0	47.34	-18.1	-27.659%	31.213	-20.837	-40.032%	51.313	-0.007	-0.013%
random_char_swap	1.0	40.74	-24.7	-37.744%	25.004	-27.046	-51.962%	51.141	-0.179	-0.349%
random_char_delete	1.0	49.25	-16.19	-24.740%	32.803	-19.247	-36.977%	51.5	0.18	0.351%
random_word_insert	1.0	65.36	-0.08	-0.122%	50.302	-1.748	-3.358%	51.859	0.539	1.050%
random_word_delete	1.0	65.24	-0.2	-0.306%	50.62	-1.43	-2.747%	51.572	0.252	0.490%
swap_syn_word_emb	1.0	55.34	-10.1	-15.434%	44.641	-7.409	-14.234%	51.572	0.252	0.490%
swap_syn_word_net	1.0	57.92	-7.52	-11.491%	44.482	-7.568	-14.539%	51.299	-0.021	-0.041%
random_word_swap	1.0	65.33	-0.11	-0.168%	51.105	-0.945	-1.815%	51.127	-0.193	-0.377%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	2.0	53.02	-12.42	-18.979%	37.287	-14.763	-28.362%	51.155	-0.165	-0.321%
typos	2.0	54.39	-11.05	-16.886%	39.354	-12.696	-24.391%	51.5	0.18	0.351%
keyboard	2.0	54.21	-11.23	-17.161%	38.186	-13.864	-26.636%	51.399	0.079	0.155%
spell_error	2.0	54.77	-10.67	-16.305%	40.801	-11.249	-21.611%	51.385	0.065	0.127%
random_char_insert	2.0	40.53	-24.91	-38.065%	25.195	-26.855	-51.595%	51.586	0.266	0.518%
random_char_replace	2.0	36.61	-28.83	-44.056%	22.229	-29.821	-57.292%	52.045	0.725	1.413%
random_char_swap	2.0	31.8	-33.64	-51.406%	19.264	-32.786	-62.990%	50.567	-0.753	-1.467%
random_char_delete	2.0	38.65	-26.79	-40.938%	24.193	-27.857	-53.520%	51.227	-0.093	-0.181%
random_word_insert	2.0	63.77	-1.67	-2.552%	47.408	-4.642	-8.918%	51.758	0.438	0.854%
random_word_delete	2.0	60.07	-5.37	-8.206%	45.095	-6.955	-13.363%	51.184	-0.136	-0.265%
swap_syn_word_emb	2.0	54.66	-10.78	-16.473%	40.992	-11.058	-21.245%	51.17	-0.15	-0.293%
swap_syn_word_net	2.0	57.28	-8.16	-12.469%	41.724	-10.326	-19.839%	51.371	0.051	0.099%
random_word_swap	2.0	64.59	-0.85	-1.299%	48.553	-3.497	-6.718%	51.098	-0.222	-0.433%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	3.0	47.96	-17.48	-26.711%	30.156	-21.894	-42.064%	50.926	-0.394	-0.768%
typos	3.0	49.17	-16.27	-24.862%	32.779	-19.271	-37.023%	51.514	0.194	0.379%
keyboard	3.0	48.31	-17.13	-26.177%	30.553	-21.497	-41.300%	51.242	-0.078	-0.153%
spell_error	3.0	49.66	-15.78	-24.114%	34.075	-17.975	-34.533%	50.811	-0.509	-0.992%
random_char_insert	3.0	33.64	-31.8	-48.594%	20.806	-31.244	-60.027%	52.146	0.826	1.609%
random_char_replace	3.0	30.81	-34.63	-52.919%	20.194	-31.856	-61.203%	51.945	0.625	1.218%
random_char_swap	3.0	28.23	-37.21	-56.861%	18.071	-33.979	-65.281%	51.041	-0.279	-0.544%
random_char_delete	3.0	32.98	-32.46	-49.603%	20.512	-31.538	-60.592%	50.696	-0.624	-1.216%
random_word_insert	3.0	61.88	-3.56	-5.440%	43.83	-8.22	-15.792%	52.175	0.855	1.665%
random_word_delete	3.0	57.3	-8.14	-12.439%	40.483	-11.567	-22.222%	51.055	-0.265	-0.516%
swap_syn_word_emb	3.0	51.07	-14.37	-21.959%	35.316	-16.734	-32.151%	51.285	-0.035	-0.069%
swap_syn_word_net	3.0	53.97	-11.47	-17.528%	36.23	-15.82	-30.394%	51.313	-0.007	-0.013%
random_word_swap	3.0	63.86	-1.58	-2.414%	46.693	-5.357	-10.293%	51.342	0.022	0.043%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	4.0	41.18	-24.26	-37.072%	24.4	-27.65	-53.122%	50.883	-0.437	-0.852%
typos	4.0	40.5	-24.94	-38.111%	26.475	-25.575	-49.136%	51.643	0.323	0.630%
keyboard	4.0	38.82	-26.62	-40.678%	24.32	-27.73	-53.275%	51.213	-0.107	-0.209%
spell_error	4.0	41.1	-24.34	-37.194%	27.492	-24.558	-47.181%	51.098	-0.222	-0.433%
random_char_insert	4.0	29.92	-35.52	-54.279%	19.113	-32.937	-63.280%	51.141	-0.179	-0.349%
random_char_replace	4.0	27.87	-37.57	-57.411%	18.771	-33.279	-63.937%	51.127	-0.193	-0.377%
random_char_swap	4.0	26.59	-38.85	-59.367%	17.022	-35.028	-67.297%	51.242	-0.078	-0.153%
random_char_delete	4.0	29.93	-35.51	-54.263%	17.92	-34.13	-65.571%	50.553	-0.767	-1.495%
random_word_insert	4.0	58.79	-6.65	-10.162%	40.523	-11.527	-22.146%	51.758	0.438	0.854%
random_word_delete	4.0	51.38	-14.06	-21.485%	35.085	-16.965	-32.594%	50.581	-0.739	-1.439%
swap_syn_word_emb	4.0	47.16	-18.28	-27.934%	32.342	-19.708	-37.863%	51.672	0.352	0.686%
swap_syn_word_net	4.0	50.08	-15.36	-23.472%	33.217	-18.833	-36.183%	51.199	-0.121	-0.237%
random_word_swap	4.0	63.24	-2.2	-3.362%	45.659	-6.391	-12.278%	51.17	-0.15	-0.293%



Table 38: Performance and decrease ratio of Multiple LoRA on CLIP-BART against text corruptions given severity 5.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	5.0	37.98	-27.46	-41.962%	21.959	-30.091	-57.812%	51.356	0.036	0.071%
punctuation	5.0	64.86	-0.58	-0.886%	51.208	-0.842	-1.617%	51.342	0.022	0.043%
typos	5.0	29.5	-35.94	-54.921%	18.668	-33.382	-64.135%	50.682	-0.638	-1.244%
keyboard	5.0	27.3	-38.14	-58.282%	17.356	-34.694	-66.656%	51.658	0.338	0.658%
spell_error	5.0	34.57	-30.87	-47.173%	23.39	-28.66	-55.062%	51.17	-0.15	-0.293%
random_char_insert	5.0	27.81	-37.63	-57.503%	18.389	-33.661	-64.670%	51.844	0.524	1.022%
random_char_replace	5.0	26.16	-39.28	-60.024%	18.365	-33.685	-64.716%	51.371	0.051	0.099%
random_char_swap	5.0	26.04	-39.4	-60.208%	18.485	-33.565	-64.487%	52.175	0.855	1.665%
random_char_delete	5.0	27.41	-38.03	-58.114%	17.268	-34.782	-66.824%	51.055	-0.265	-0.516%
to_passive	5.0	62.8	-2.64	-4.034%	43.95	-8.1	-15.562%	51.572	0.252	0.490%
tense	5.0	64.6	-0.84	-1.284%	51.654	-0.396	-0.761%	51.242	-0.078	-0.153%
to_formal	5.0	64.99	-0.45	-0.688%	51.296	-0.754	-1.449%	51.184	-0.136	-0.265%
to_casual	5.0	62.47	-2.97	-4.539%	45.484	-6.566	-12.614%	50.352	-0.968	-1.887%
to_active	5.0	63.37	-2.07	-3.163%	48.466	-3.584	-6.887%	51.299	-0.021	-0.041%
double_denial	5.0	65.34	-0.1	-0.153%	52.035	-0.015	-0.028%	51.328	0.008	0.015%
insert_adv	5.0	61.41	-4.03	-6.158%	48.521	-3.529	-6.780%	51.141	-0.179	-0.349%
append_irr	5.0	59.52	-5.92	-9.046%	45.611	-6.439	-12.370%	51.428	0.108	0.211%
random_word_insert	5.0	55.27	-10.17	-15.541%	36.047	-16.003	-30.745%	51.443	0.123	0.239%
drop_nn	5.0	45.07	-20.37	-31.128%	31.34	-20.71	-39.788%	51.328	0.008	0.015%
drop_rand_one_nn	5.0	56.58	-8.86	-13.539%	43.767	-8.283	-15.914%	51.256	-0.064	-0.125%
drop_vb	5.0	58.68	-6.76	-10.330%	40.658	-11.392	-21.886%	51.974	0.654	1.274%
drop_vb_nn	5.0	44.94	-20.5	-31.326%	27.818	-24.232	-46.554%	52.146	0.826	1.609%
only_nn	5.0	27.0	-38.44	-58.741%	22.508	-29.542	-56.758%	52.175	0.855	1.665%
only_vb	5.0	50.54	-14.9	-22.769%	38.162	-13.888	-26.682%	51.658	0.338	0.658%
only_vb_nn	5.0	29.47	-35.97	-54.966%	27.596	-24.454	-46.982%	52.002	0.682	1.329%
drop_rand_one_vb	5.0	63.16	-2.28	-3.484%	46.176	-5.874	-11.286%	51.916	0.596	1.162%
drop_first	5.0	45.9	-19.54	-29.859%	42.113	-9.937	-19.091%	51.6	0.28	0.546%
drop_last	5.0	53.95	-11.49	-17.558%	44.999	-7.051	-13.546%	51.5	0.18	0.351%
drop_first_and_last	5.0	34.39	-31.05	-47.448%	36.214	-15.836	-30.425%	51.356	0.036	0.071%
shuffle_order	5.0	59.74	-5.7	-8.710%	38.909	-13.141	-25.246%	51.098	-0.222	-0.433%
random_word_delete	5.0	45.47	-19.97	-30.517%	29.369	-22.681	-43.576%	51.184	-0.136	-0.265%
swap_syn_word_emb	5.0	46.29	-19.15	-29.263%	30.665	-21.385	-41.086%	51.055	-0.265	-0.516%
swap_syn_word_net	5.0	48.52	-16.92	-25.856%	31.849	-20.201	-38.810%	51.055	-0.265	-0.516%
back_trans	5.0	62.07	-3.37	-5.150%	48.179	-3.871	-7.436%	51.744	0.424	0.826%
random_word_swap	5.0	62.66	-2.78	-4.248%	44.395	-7.655	-14.707%	51.371	0.051	0.099%
nonsense	5.0	8.37	-57.07	-87.210%	13.77	-38.28	-73.545%	50.797	-0.523	-1.020%

Table 39: Performance and decrease ratio of Multiple Prompts on CLIP-BART against text corruptions given severity 1 to 4.

corruption	severity	VQA			GQA			CIDer	NLVR	
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio		Decrease	Decrease Ratio
ocr	1.0	41.44	-5.37	-11.472%	29.758	-4.252	-12.501%	50.251	0.381	0.764%
typos	1.0	39.78	-7.03	-15.018%	29.599	-4.411	-12.969%	49.978	0.108	0.218%
keyboard	1.0	39.47	-7.34	-15.680%	29.48	-4.53	-13.319%	49.978	0.108	0.218%
spell_error	1.0	39.38	-7.43	-15.873%	30.259	-3.751	-11.029%	49.921	0.051	0.102%
random_char_insert	1.0	38.69	-8.12	-17.347%	26.244	-7.766	-22.834%	50.452	0.582	1.167%
random_char_replace	1.0	37.03	-9.78	-20.893%	24.575	-9.435	-27.743%	50.754	0.884	1.772%
random_char_swap	1.0	33.51	-13.3	-28.413%	21.387	-12.623	-37.117%	50.194	0.324	0.649%
random_char_delete	1.0	37.19	-9.62	-20.551%	24.36	-9.65	-28.374%	49.878	0.008	0.016%
random_word_insert	1.0	46.83	0.02	0.043%	33.455	-0.555	-1.631%	49.892	0.022	0.045%
random_word_delete	1.0	46.69	-0.12	-0.256%	33.59	-0.42	-1.234%	49.964	0.094	0.189%
swap_syn_word_emb	1.0	43.73	-3.08	-6.580%	31.468	-2.542	-7.475%	49.921	0.051	0.102%
swap_syn_word_net	1.0	44.91	-1.9	-4.059%	30.752	-3.258	-9.579%	49.964	0.094	0.189%
random_word_swap	1.0	46.77	-0.04	-0.085%	33.821	-0.189	-0.556%	50.036	0.166	0.333%

corruption	severity	VQA			GQA			CIDer	NLVR	
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio		Decrease	Decrease Ratio
ocr	2.0	41.17	-5.64	-12.049%	28.462	-5.548	-16.312%	50.079	0.209	0.419%
typos	2.0	39.39	-7.42	-15.851%	28.423	-5.587	-16.429%	49.95	0.08	0.160%
keyboard	2.0	38.83	-7.98	-17.048%	28.089	-5.921	-17.410%	50.495	0.625	1.254%
spell_error	2.0	38.87	-7.94	-16.962%	28.669	-5.341	-15.704%	49.433	-0.437	-0.876%
random_char_insert	2.0	33.92	-12.89	-27.537%	21.657	-12.353	-36.322%	50.409	0.539	1.081%
random_char_replace	2.0	31.53	-15.28	-32.643%	20.178	-13.832	-40.670%	50.725	0.855	1.714%
random_char_swap	2.0	28.86	-17.95	-38.347%	18.357	-15.653	-46.023%	50.022	0.152	0.304%
random_char_delete	2.0	31.78	-15.03	-32.109%	20.536	-13.474	-39.618%	50.194	0.324	0.649%
random_word_insert	2.0	45.83	-0.98	-2.094%	31.953	-2.057	-6.049%	50.079	0.209	0.419%
random_word_delete	2.0	42.35	-4.46	-9.528%	31.102	-2.908	-8.551%	49.734	-0.136	-0.272%
swap_syn_word_emb	2.0	43.35	-3.46	-7.392%	29.416	-4.594	-13.506%	49.935	0.065	0.131%
swap_syn_word_net	2.0	44.62	-2.19	-4.678%	29.814	-4.196	-12.338%	49.763	-0.107	-0.214%
random_word_swap	2.0	46.18	-0.63	-1.346%	33.479	-0.531	-1.561%	49.907	0.037	0.074%

corruption	severity	VQA			GQA			CIDer	NLVR	
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio		Decrease	Decrease Ratio
ocr	3.0	38.72	-8.09	-17.283%	24.781	-9.229	-27.135%	49.878	0.008	0.016%
typos	3.0	36.34	-10.47	-22.367%	24.805	-9.205	-27.065%	50.05	0.18	0.361%
keyboard	3.0	35.76	-11.05	-23.606%	24.495	-9.515	-27.977%	49.935	0.065	0.131%
spell_error	3.0	35.55	-11.26	-24.055%	25.258	-8.752	-25.732%	49.892	0.022	0.045%
random_char_insert	3.0	30.25	-16.56	-35.377%	19.645	-14.365	-42.236%	49.821	-0.049	-0.099%
random_char_replace	3.0	28.76	-18.05	-38.560%	18.898	-15.112	-44.434%	50.266	0.396	0.793%
random_char_swap	3.0	27.14	-19.67	-42.021%	17.602	-16.408	-48.244%	49.763	-0.107	-0.214%
random_char_delete	3.0	28.88	-17.93	-38.304%	18.524	-15.486	-45.532%	50.366	0.496	0.995%
random_word_insert	3.0	45.27	-1.54	-3.290%	30.649	-3.361	-9.883%	50.51	0.64	1.282%
random_word_delete	3.0	40.34	-6.47	-13.822%	29.377	-4.633	-13.623%	49.993	0.123	0.246%
swap_syn_word_emb	3.0	41.79	-5.02	-10.724%	26.586	-7.424	-21.829%	49.978	0.108	0.218%
swap_syn_word_net	3.0	43.28	-3.53	-7.541%	27.397	-6.613	-19.444%	50.108	0.238	0.477%
random_word_swap	3.0	45.65	-1.16	-2.478%	33.018	-0.992	-2.917%	50.122	0.252	0.505%

corruption	severity	VQA			GQA			CIDer	NLVR	
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio		Decrease	Decrease Ratio
ocr	4.0	34.95	-11.86	-25.336%	21.919	-12.091	-35.551%	50.38	0.51	1.023%
typos	4.0	32.05	-14.76	-31.532%	21.657	-12.353	-36.322%	50.782	0.912	1.829%
keyboard	4.0	30.97	-15.84	-33.839%	21.076	-12.934	-38.029%	50.366	0.496	0.995%
spell_error	4.0	31.32	-15.49	-33.091%	21.903	-12.107	-35.597%	49.964	0.094	0.189%
random_char_insert	4.0	28.93	-17.88	-38.197%	18.787	-15.223	-44.761%	50.309	0.439	0.879%
random_char_replace	4.0	27.32	-19.49	-41.636%	18.278	-15.732	-46.257%	49.964	0.094	0.189%
random_char_swap	4.0	26.13	-20.68	-44.179%	17.332	-16.678	-49.039%	49.763	-0.107	-0.214%
random_char_delete	4.0	27.23	-19.58	-41.829%	17.65	-16.36	-48.104%	50.136	0.266	0.534%
random_word_insert	4.0	44.37	-2.44	-5.213%	29.138	-4.872	-14.325%	50.954	1.084	2.175%
random_word_delete	4.0	36.63	-10.18	-21.747%	27.325	-6.685	-19.655%	49.835	-0.035	-0.070%
swap_syn_word_emb	4.0	40.46	-6.35	-13.565%	25.473	-8.537	-25.101%	49.821	-0.049	-0.099%
swap_syn_word_net	4.0	42.49	-4.32	-9.229%	26.053	-7.957	-23.395%	50.395	0.525	1.052%
random_word_swap	4.0	45.21	-1.6	-3.418%	32.819	-1.191	-3.501%	49.864	-0.006	-0.013%

Table 40: Performance and decrease ratio of Multiple Prompts on CLIP-BART against text corruptions given severity 5.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	5.0	32.66	-14.15	-30.229%	20.496	-13.514	-39.735%	50.093	0.223	0.448%
punctuation	5.0	45.08	-1.73	-3.696%	33.344	-0.666	-1.958%	50.065	0.195	0.390%
typos	5.0	26.63	-20.18	-43.110%	16.855	-17.155	-50.442%	49.849	-0.021	-0.042%
keyboard	5.0	25.78	-21.03	-44.926%	15.789	-18.221	-53.574%	50.553	0.683	1.369%
spell_error	5.0	28.07	-18.74	-40.034%	19.28	-14.73	-43.312%	50.596	0.726	1.455%
random_char_insert	5.0	27.32	-19.49	-41.636%	18.19	-15.82	-46.514%	49.835	-0.035	-0.070%
random_char_replace	5.0	26.41	-20.4	-43.580%	17.721	-16.289	-47.894%	50.395	0.525	1.052%
random_char_swap	5.0	25.71	-21.1	-45.076%	18.016	-15.994	-47.029%	49.519	-0.351	-0.704%
random_char_delete	5.0	26.47	-20.34	-43.452%	17.515	-16.495	-48.501%	49.95	0.08	0.160%
to_passive	5.0	43.64	-3.17	-6.772%	27.508	-6.502	-19.117%	49.706	-0.164	-0.329%
tense	5.0	46.64	-0.17	-0.363%	33.837	-0.173	-0.509%	49.821	-0.049	-0.099%
to_formal	5.0	46.62	-0.19	-0.406%	33.718	-0.292	-0.860%	49.95	0.08	0.160%
to_casual	5.0	43.71	-3.1	-6.623%	28.073	-5.937	-17.457%	49.978	0.108	0.218%
to_active	5.0	44.44	-2.37	-5.063%	31.778	-2.232	-6.564%	49.734	-0.136	-0.272%
double_denial	5.0	46.79	-0.02	-0.043%	34.012	0.002	0.005%	49.878	0.008	0.016%
insert_adv	5.0	45.23	-1.58	-3.375%	32.931	-1.079	-3.174%	49.964	0.094	0.189%
append_irr	5.0	35.62	-11.19	-23.905%	27.699	-6.311	-18.556%	50.165	0.295	0.592%
random_word_insert	5.0	43.28	-3.53	-7.541%	27.5	-6.51	-19.140%	50.452	0.582	1.167%
drop_nn	5.0	40.11	-6.7	-14.313%	24.789	-9.221	-27.112%	50.28	0.41	0.822%
drop_rand_one_nn	5.0	43.3	-3.51	-7.498%	30.728	-3.282	-9.649%	50.036	0.166	0.333%
drop_vb	5.0	44.87	-1.94	-4.144%	27.238	-6.772	-19.912%	50.022	0.152	0.304%
drop_vb_nn	5.0	41.13	-5.68	-12.134%	22.333	-11.677	-34.335%	50.151	0.281	0.563%
only_nn	5.0	27.59	-19.22	-41.060%	22.261	-11.749	-34.545%	50.251	0.381	0.764%
only_vb	5.0	38.75	-8.06	-17.219%	27.174	-6.836	-20.099%	50.28	0.41	0.822%
only_vb_nn	5.0	26.41	-20.4	-43.580%	24.384	-9.626	-28.304%	50.366	0.496	0.995%
drop_rand_one_vb	5.0	46.18	-0.63	-1.346%	29.909	-4.101	-12.057%	49.935	0.065	0.131%
drop_first	5.0	27.59	-19.22	-41.060%	26.96	-7.05	-20.730%	50.208	0.338	0.678%
drop_last	5.0	45.33	-1.48	-3.162%	31.778	-2.232	-6.564%	50.165	0.295	0.592%
drop_first_and_last	5.0	27.7	-19.11	-40.825%	26.467	-7.543	-22.179%	50.495	0.625	1.254%
shuffle_order	5.0	40.81	-6.0	-12.818%	30.601	-3.409	-10.023%	49.993	0.123	0.246%
random_word_delete	5.0	33.65	-13.16	-28.114%	24.813	-9.197	-27.042%	49.548	-0.322	-0.646%
swap_syn_word_emb	5.0	40.05	-6.76	-14.441%	24.924	-9.086	-26.714%	49.878	0.008	0.016%
swap_syn_word_net	5.0	39.41	-7.4	-15.809%	24.535	-9.475	-27.860%	50.366	0.496	0.995%
back_trans	5.0	45.95	-0.86	-1.837%	32.422	-1.588	-4.670%	49.835	-0.035	-0.070%
random_word_swap	5.0	44.71	-2.1	-4.486%	32.477	-1.533	-4.506%	49.706	-0.164	-0.329%
nonsense	5.0	24.93	-21.88	-46.742%	17.427	-16.583	-48.758%	49.404	-0.466	-0.934%

Table 41: Performance and decrease ratio of Single Adapter on CLIP-BART against text corruptions given severity 1 to 4.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	1.0	54.73	-10.62	-16.251%	42.853	-11.287	-20.849%	59.796	-14.094	-19.074%
typos	1.0	56.85	-8.5	-13.007%	43.338	-10.802	-19.953%	71.437	-2.453	-3.320%
keyboard	1.0	55.66	-9.69	-14.828%	42.36	-11.78	-21.759%	70.59	-3.3	-4.466%
spell_error	1.0	56.68	-8.67	-13.267%	43.846	-10.294	-19.013%	70.245	-3.645	-4.932%
random_char_insert	1.0	51.87	-13.48	-20.627%	35.602	-18.538	-34.241%	66.6	-7.29	-9.866%
random_char_replace	1.0	48.35	-17.0	-26.014%	32.97	-21.17	-39.102%	63.93	-9.96	-13.480%
random_char_swap	1.0	41.63	-23.72	-36.297%	28.311	-25.829	-47.707%	59.94	-13.95	-18.880%
random_char_delete	1.0	49.24	-16.11	-24.652%	34.576	-19.564	-36.135%	64.963	-8.927	-12.081%
random_word_insert	1.0	65.74	0.39	0.597%	48.362	-5.778	-10.672%	73.977	0.087	0.118%
random_word_delete	1.0	65.62	0.27	0.413%	49.07	-5.07	-9.365%	72.772	-1.118	-1.514%
swap_syn_word_emb	1.0	55.58	-9.77	-14.950%	43.171	-10.969	-20.261%	68.48	-5.41	-7.322%
swap_syn_word_net	1.0	58.29	-7.06	-10.803%	44.268	-9.872	-18.235%	71.107	-2.783	-3.767%
random_word_swap	1.0	65.7	0.35	0.536%	49.777	-4.363	-8.058%	73.087	-0.803	-1.086%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	2.0	54.05	-11.3	-17.292%	39.044	-15.096	-27.883%	66.557	-7.333	-9.925%
typos	2.0	55.82	-9.53	-14.583%	40.086	-14.054	-25.959%	67.547	-6.343	-8.584%
keyboard	2.0	55.16	-10.19	-15.593%	39.235	-14.905	-27.530%	66.743	-7.147	-9.672%
spell_error	2.0	55.97	-9.38	-14.353%	40.491	-13.649	-25.210%	67.791	-6.099	-8.254%
random_char_insert	2.0	41.58	-23.77	-36.373%	27.166	-26.974	-49.822%	60.614	-13.276	-17.967%
random_char_replace	2.0	37.16	-28.19	-43.137%	24.758	-29.382	-54.271%	57.543	-16.347	-22.124%
random_char_swap	2.0	32.62	-32.73	-50.084%	21.633	-32.507	-60.042%	55.103	-18.787	-25.426%
random_char_delete	2.0	39.07	-26.28	-40.214%	26.499	-27.641	-51.055%	58.533	-15.357	-20.783%
random_word_insert	2.0	65.05	-0.3	-0.459%	45.389	-8.751	-16.164%	73.733	-0.157	-0.212%
random_word_delete	2.0	60.87	-4.48	-6.855%	44.888	-9.252	-17.089%	69.901	-3.989	-5.399%
swap_syn_word_emb	2.0	54.71	-10.64	-16.282%	39.156	-14.984	-27.677%	64.303	-9.587	-12.974%
swap_syn_word_net	2.0	57.61	-7.74	-11.844%	42.089	-12.051	-22.258%	69.011	-4.879	-6.603%
random_word_swap	2.0	65.1	-0.25	-0.383%	48.299	-5.841	-10.789%	72.47	-1.42	-1.921%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	3.0	49.17	-16.18	-24.759%	33.598	-20.542	-37.942%	63.298	-10.592	-14.334%
typos	3.0	51.1	-14.25	-21.806%	34.592	-19.548	-36.106%	65.25	-8.64	-11.692%
keyboard	3.0	49.38	-15.97	-24.438%	32.74	-21.4	-39.528%	63.614	-10.276	-13.907%
spell_error	3.0	50.93	-14.42	-22.066%	33.916	-20.224	-37.354%	63.959	-9.931	-13.441%
random_char_insert	3.0	34.46	-30.89	-47.269%	23.541	-30.599	-56.518%	57.83	-16.06	-21.735%
random_char_replace	3.0	31.27	-34.08	-52.150%	21.18	-32.96	-60.880%	55.835	-18.055	-24.435%
random_char_swap	3.0	28.5	-36.85	-56.389%	20.099	-34.041	-62.877%	52.935	-20.955	-28.359%
random_char_delete	3.0	33.39	-31.96	-48.906%	23.016	-31.124	-57.487%	56.466	-17.424	-23.581%
random_word_insert	3.0	63.53	-1.82	-2.785%	42.471	-11.669	-21.553%	71.997	-1.893	-2.563%
random_word_delete	3.0	58.37	-6.98	-10.681%	41.104	-13.036	-24.079%	67.676	-6.214	-8.410%
swap_syn_word_emb	3.0	50.67	-14.68	-22.464%	34.401	-19.739	-36.459%	59.954	-13.936	-18.860%
swap_syn_word_net	3.0	54.31	-11.04	-16.894%	37.979	-16.161	-29.850%	65.308	-8.582	-11.615%
random_word_swap	3.0	64.55	-0.8	-1.224%	46.716	-7.424	-13.712%	72.083	-1.807	-2.446%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	4.0	42.41	-22.94	-35.103%	28.947	-25.193	-46.532%	58.677	-15.213	-20.589%
typos	4.0	42.13	-23.22	-35.532%	28.359	-25.781	-47.619%	60.916	-12.974	-17.559%
keyboard	4.0	39.82	-25.53	-39.067%	26.045	-28.095	-51.892%	60.428	-13.462	-18.219%
spell_error	4.0	42.01	-23.34	-35.715%	27.962	-26.178	-48.353%	59.911	-13.979	-18.919%
random_char_insert	4.0	30.42	-34.93	-53.451%	21.1	-33.04	-61.026%	55.347	-18.543	-25.096%
random_char_replace	4.0	27.58	-37.77	-57.796%	19.272	-34.868	-64.404%	54.084	-19.806	-26.805%
random_char_swap	4.0	26.37	-38.98	-59.648%	19.105	-35.035	-64.712%	52.591	-21.299	-28.826%
random_char_delete	4.0	30.1	-35.25	-53.940%	21.235	-32.905	-60.777%	54.371	-19.519	-26.417%
random_word_insert	4.0	61.98	-3.37	-5.157%	40.173	-13.967	-25.797%	70.662	-3.228	-4.369%
random_word_delete	4.0	53.05	-12.3	-18.822%	36.317	-17.823	-32.920%	66.126	-7.764	-10.507%
swap_syn_word_emb	4.0	47.08	-18.27	-27.957%	30.689	-23.451	-43.316%	58.935	-14.955	-20.240%
swap_syn_word_net	4.0	50.6	-14.75	-22.571%	35.363	-18.777	-34.682%	61.863	-12.027	-16.277%
random_word_swap	4.0	64.14	-1.21	-1.852%	46.383	-7.757	-14.328%	72.097	-1.793	-2.427%

Table 42: Performance and decrease ratio of Single Adapter on CLIP-BART against text corruptions given severity 5.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	5.0	39.25	-26.1	-39.939%	26.475	-27.665	-51.099%	56.696	-17.194	-23.270%
punctuation	5.0	65.22	-0.13	-0.199%	49.658	-4.482	-8.278%	74.264	0.374	0.507%
typos	5.0	29.93	-35.42	-54.200%	20.671	-33.469	-61.819%	54.256	-19.634	-26.572%
keyboard	5.0	27.5	-37.85	-57.919%	19.232	-34.908	-64.477%	52.849	-21.041	-28.476%
spell_error	5.0	35.31	-30.04	-45.968%	23.772	-30.368	-56.092%	55.993	-17.897	-24.222%
random_char_insert	5.0	27.2	-38.15	-58.378%	19.121	-35.019	-64.683%	54.055	-19.835	-26.844%
random_char_replace	5.0	25.61	-39.74	-60.811%	18.516	-35.624	-65.799%	51.931	-21.959	-29.719%
random_char_swap	5.0	25.41	-39.94	-61.117%	19.351	-34.789	-64.257%	53.552	-20.338	-27.524%
random_char_delete	5.0	27.41	-37.94	-58.057%	20.21	-33.93	-62.671%	52.519	-21.371	-28.923%
to_passive	5.0	61.93	-3.42	-5.233%	45.357	-8.783	-16.223%	71.753	-2.137	-2.893%
tense	5.0	64.96	-0.39	-0.597%	50.151	-3.989	-7.368%	73.805	-0.085	-0.115%
to_formal	5.0	65.45	0.1	0.153%	49.626	-4.514	-8.337%	73.346	-0.544	-0.737%
to_casual	5.0	62.54	-2.81	-4.300%	46.144	-7.996	-14.769%	72.241	-1.649	-2.232%
to_active	5.0	63.97	-1.38	-2.112%	48.911	-5.229	-9.659%	73.518	-0.372	-0.503%
double_denial	5.0	65.67	0.32	0.490%	50.421	-3.719	-6.869%	73.862	-0.028	-0.037%
insert_adv	5.0	62.13	-3.22	-4.927%	46.987	-7.153	-13.212%	72.212	-1.678	-2.271%
append_irr	5.0	60.64	-4.71	-7.207%	44.212	-9.928	-18.337%	67.346	-6.544	-8.856%
random_word_insert	5.0	57.72	-7.63	-11.676%	36.111	-18.029	-33.301%	69.671	-4.219	-5.709%
drop_nn	5.0	47.26	-18.09	-27.682%	33.185	-20.955	-38.705%	64.188	-9.702	-13.130%
drop_rand_one_nn	5.0	58.25	-7.1	-10.865%	43.576	-10.564	-19.512%	72.398	-1.492	-2.019%
drop_vb	5.0	60.07	-5.28	-8.800%	42.487	-11.653	-21.524%	71.796	-2.094	-2.834%
drop_vb_nn	5.0	47.72	-17.63	-26.978%	32.088	-22.052	-40.732%	61.777	-12.113	-16.393%
only_nn	5.0	38.19	-27.16	-41.561%	25.561	-28.579	-52.788%	55.289	-18.601	-25.174%
only_vb	5.0	53.34	-12.01	-18.378%	37.725	-16.415	-30.320%	67.03	-6.86	-9.284%
only_vb_nn	5.0	43.62	-21.73	-33.252%	28.582	-25.558	-47.208%	58.461	-15.429	-20.881%
drop_rand_one_vb	5.0	64.17	-1.18	-1.806%	47.241	-6.899	-12.742%	73.13	-0.76	-1.028%
drop_first	5.0	61.73	-3.62	-5.539%	44.069	-10.071	-18.602%	73.13	-0.76	-1.028%
drop_last	5.0	55.02	-10.33	-15.807%	43.346	-10.794	-19.938%	70.949	-2.941	-3.981%
drop_first_and_last	5.0	49.3	-16.05	-24.560%	37.176	-16.964	-31.334%	69.399	-4.491	-6.079%
shuffle_order	5.0	62.05	-3.3	-5.050%	40.865	-13.275	-24.520%	69.485	-4.405	-5.962%
random_word_delete	5.0	47.16	-18.19	-27.835%	31.905	-22.235	-41.070%	63.93	-9.96	-13.480%
swap_syn_word_emb	5.0	46.35	-19.0	-29.074%	29.806	-24.334	-44.946%	58.375	-15.515	-20.997%
swap_syn_word_net	5.0	47.7	-17.65	-27.008%	34.449	-19.691	-36.370%	60.055	-13.835	-18.724%
back_trans	5.0	62.29	-3.06	-4.682%	46.629	-7.511	-13.873%	73.087	-0.803	-1.086%
random_word_swap	5.0	63.78	-1.57	-2.402%	44.896	-9.244	-17.075%	72.183	-1.707	-2.310%
nonsense	5.0	0.09	-65.26	-99.862%	0.0	-54.14	-100.000%	51.342	-22.548	-30.516%

Table 43: Performance and decrease ratio of Single Compacter on CLIP-BART against text corruptions given severity 1 to 4.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	1.0	54.28	-10.19	-15.806%	41.779	-11.121	-21.022%	56.122	-13.818	-19.757%
typos	1.0	56.27	-8.2	-12.719%	43.171	-9.729	-18.392%	68.236	-1.704	-2.436%
keyboard	1.0	55.05	-9.42	-14.611%	42.145	-10.755	-20.331%	67.447	-2.493	-3.565%
spell_error	1.0	55.9	-8.57	-13.293%	42.892	-10.008	-18.918%	67.92	-2.02	-2.888%
random_char_insert	1.0	51.37	-13.1	-20.320%	35.427	-17.473	-33.030%	64.633	-5.307	-7.588%
random_char_replace	1.0	47.83	-16.64	-25.810%	33.002	-19.898	-37.614%	62.222	-7.718	-11.035%
random_char_swap	1.0	41.69	-22.78	-35.334%	27.962	-24.938	-47.143%	57.815	-12.125	-17.336%
random_char_delete	1.0	49.17	-15.3	-23.732%	34.743	-18.157	-34.323%	62.452	-7.488	-10.707%
random_word_insert	1.0	64.38	-0.09	-0.140%	48.322	-4.578	-8.653%	70.418	0.478	0.683%
random_word_delete	1.0	64.36	-0.11	-0.171%	48.593	-4.307	-8.142%	69.427	-0.513	-0.733%
swap_syn_word_emb	1.0	54.63	-9.84	-15.263%	42.741	-10.159	-19.204%	65.767	-4.173	-5.966%
swap_syn_word_net	1.0	56.92	-7.55	-11.711%	43.918	-8.982	-16.979%	67.662	-2.278	-3.257%
random_word_swap	1.0	64.34	-0.13	-0.202%	49.014	-3.886	-7.346%	69.686	-0.254	-0.364%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	2.0	53.82	-10.65	-16.519%	39.251	-13.649	-25.801%	63.657	-6.283	-8.983%
typos	2.0	55.05	-9.42	-14.611%	40.142	-12.758	-24.118%	64.92	-5.02	-7.177%
keyboard	2.0	54.56	-9.91	-15.371%	38.893	-14.007	-26.478%	64.992	-4.948	-7.074%
spell_error	2.0	55.03	-9.44	-14.642%	40.626	-12.274	-23.201%	64.432	-5.508	-7.875%
random_char_insert	2.0	41.58	-22.89	-35.505%	27.238	-25.662	-48.510%	59.567	-10.373	-14.832%
random_char_replace	2.0	36.69	-27.78	-43.090%	24.058	-28.842	-54.522%	56.897	-13.043	-18.649%
random_char_swap	2.0	32.41	-32.06	-49.729%	22.229	-30.671	-57.979%	54.93	-15.01	-21.461%
random_char_delete	2.0	38.9	-25.57	-39.662%	26.697	-26.203	-49.532%	57.126	-12.814	-18.321%
random_word_insert	2.0	63.54	-0.93	-1.443%	45.516	-7.384	-13.958%	70.332	0.392	0.560%
random_word_delete	2.0	59.56	-4.91	-7.616%	43.711	-9.189	-17.370%	67.82	-2.12	-3.032%
swap_syn_word_emb	2.0	53.58	-10.89	-16.892%	39.513	-13.387	-25.305%	61.49	-8.45	-12.082%
swap_syn_word_net	2.0	56.45	-8.02	-12.440%	41.803	-11.097	-20.977%	65.207	-4.733	-6.767%
random_word_swap	2.0	63.41	-1.06	-1.644%	47.201	-5.699	-10.772%	69.04	-0.9	-1.287%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	3.0	49.39	-15.08	-23.391%	33.455	-19.445	-36.758%	59.739	-10.201	-14.586%
typos	3.0	50.46	-14.01	-21.731%	34.576	-18.324	-34.638%	62.81	-7.13	-10.194%
keyboard	3.0	49.29	-15.18	-23.546%	32.724	-20.176	-38.140%	62.078	-7.862	-11.241%
spell_error	3.0	50.28	-14.19	-22.010%	34.195	-18.705	-35.360%	61.849	-8.091	-11.569%
random_char_insert	3.0	34.67	-29.8	-46.223%	23.263	-29.637	-56.025%	56.524	-13.416	-19.183%
random_char_replace	3.0	30.24	-34.23	-53.094%	20.687	-32.213	-60.894%	54.83	-15.11	-21.604%
random_char_swap	3.0	28.78	-35.69	-55.359%	20.329	-32.571	-61.571%	52.232	-17.708	-25.319%
random_char_delete	3.0	33.24	-31.23	-48.441%	23.318	-29.582	-55.920%	54.414	-15.526	-22.200%
random_word_insert	3.0	62.35	-2.12	-3.288%	42.407	-10.493	-19.835%	69.255	-0.685	-0.979%
random_word_delete	3.0	57.35	-7.12	-11.044%	40.817	-12.083	-22.841%	65.494	-4.446	-6.356%
swap_syn_word_emb	3.0	50.21	-14.26	-22.119%	34.179	-18.721	-35.390%	59.265	-10.675	-15.263%
swap_syn_word_net	3.0	53.02	-11.45	-17.760%	38.297	-14.603	-27.605%	62.193	-7.747	-11.076%
random_word_swap	3.0	62.96	-1.51	-2.342%	46.224	-6.676	-12.621%	69.255	-0.685	-0.979%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	4.0	42.76	-21.71	-33.675%	29.067	-23.833	-45.054%	56.28	-13.66	-19.532%
typos	4.0	42.49	-21.98	-34.093%	28.033	-24.867	-47.007%	58.677	-11.263	-16.104%
spell_error	4.0	42.41	-22.06	-34.217%	28.073	-24.827	-46.932%	58.16	-11.78	-16.843%
random_char_insert	4.0	30.63	-33.84	-52.490%	20.719	-32.181	-60.834%	54.988	-14.952	-21.379%
random_char_replace	4.0	26.52	-37.95	-58.865%	18.079	-34.821	-65.824%	52.978	-16.962	-24.252%
random_char_swap	4.0	26.33	-38.14	-59.159%	19.288	-33.612	-63.539%	53.194	-16.746	-23.944%
random_char_delete	4.0	29.97	-34.5	-53.513%	20.981	-31.919	-60.338%	53.323	-16.617	-23.759%
random_word_insert	4.0	60.56	-3.91	-6.065%	40.237	-12.663	-23.938%	68.365	-1.575	-2.252%
random_word_delete	4.0	51.55	-12.92	-20.040%	35.077	-17.823	-33.692%	63.428	-6.512	-9.311%
swap_syn_word_emb	4.0	46.5	-17.97	-27.873%	31.356	-21.544	-40.725%	58.102	-11.838	-16.925%
swap_syn_word_net	4.0	49.65	-14.82	-22.987%	35.952	-16.948	-32.038%	59.251	-10.689	-15.283%
random_word_swap	4.0	62.62	-1.85	-2.870%	45.277	-7.623	-14.409%	68.164	-1.776	-2.539%
random_word_swap	3.0	62.96	-1.51	-2.342%	46.224	-6.676	-12.621%	69.255	-0.685	-0.979%

Table 44: Performance and decrease ratio of Single Compacter on CLIP-BART against text corruptions given severity 5.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	5.0	40.14	-24.33	-37.738%	26.475	-26.425	-49.953%	54.988	-14.952	-21.379%
punctuation	5.0	64.18	-0.29	-0.450%	48.768	-4.132	-7.812%	69.858	-0.082	-0.117%
typos	5.0	30.66	-33.81	-52.443%	20.83	-32.07	-60.624%	52.146	-17.794	-25.442%
keyboard	5.0	27.91	-36.56	-56.709%	18.922	-33.978	-64.231%	51.931	-18.009	-25.750%
spell_error	5.0	36.05	-28.42	-44.083%	24.09	-28.81	-54.462%	55.461	-14.479	-20.701%
random_char_insert	5.0	27.56	-36.91	-57.251%	19.447	-33.453	-63.239%	53.825	-16.115	-23.041%
random_char_replace	5.0	24.0	-40.47	-62.773%	16.529	-36.371	-68.755%	52.246	-17.694	-25.298%
random_char_swap	5.0	25.68	-38.79	-60.168%	20.122	-32.778	-61.961%	52.863	-17.077	-24.416%
random_char_delete	5.0	27.65	-36.82	-57.112%	19.86	-33.04	-62.457%	52.347	-17.593	-25.155%
to_passive	5.0	59.84	-4.63	-7.182%	44.761	-8.139	-15.386%	68.638	-1.302	-1.862%
tense	5.0	63.67	-0.8	-1.241%	49.459	-3.441	-6.504%	70.159	0.219	0.314%
to_formal	5.0	63.94	-0.53	-0.822%	48.879	-4.021	-7.601%	69.973	0.033	0.047%
to_casual	5.0	60.54	-3.93	-6.096%	45.572	-7.328	-13.853%	68.652	-1.288	-1.841%
to_active	5.0	62.53	-1.94	-3.009%	47.798	-5.102	-9.645%	69.528	-0.412	-0.589%
double_denial	5.0	64.43	-0.04	-0.062%	49.754	-3.146	-5.948%	69.944	0.004	0.006%
insert_adv	5.0	60.74	-3.73	-5.786%	45.588	-7.312	-13.823%	68.997	-0.943	-1.349%
append_irr	5.0	59.21	-5.26	-8.159%	43.171	-9.729	-18.392%	63.715	-6.225	-8.901%
random_word_insert	5.0	56.42	-8.05	-12.486%	36.484	-16.416	-31.031%	67.906	-2.034	-2.908%
drop_nn	5.0	47.12	-17.35	-26.912%	32.732	-20.168	-38.125%	63.815	-6.125	-8.757%
drop_rand_one_nn	5.0	57.7	-6.77	-10.501%	43.568	-9.332	-17.641%	69.241	-0.699	-1.000%
drop_vb	5.0	58.63	-5.84	-9.058%	42.447	-10.453	-19.760%	68.724	-1.216	-1.739%
drop_vb_nn	5.0	46.33	-18.14	-28.137%	30.72	-22.18	-41.928%	61.045	-8.895	-12.718%
only_nn	5.0	37.29	-27.18	-42.159%	23.072	-29.828	-56.386%	53.567	-16.373	-23.410%
only_vb	5.0	51.79	-12.68	-19.668%	36.19	-16.71	-31.588%	63.873	-6.067	-8.675%
only_vb_nn	5.0	41.8	-22.67	-35.164%	25.783	-27.117	-51.261%	56.581	-13.359	-19.101%
drop_rand_one_vb	5.0	62.38	-2.09	-3.242%	46.812	-6.088	-11.509%	69.614	-0.326	-0.466%
drop_first	5.0	59.78	-4.69	-7.275%	43.075	-9.825	-18.572%	69.772	-0.168	-0.241%
drop_last	5.0	54.38	-10.09	-15.651%	43.306	-9.594	-18.137%	67.891	-2.049	-2.929%
drop_first_and_last	5.0	47.38	-17.09	-26.508%	37.224	-15.676	-29.634%	66.987	-2.953	-4.222%
shuffle_order	5.0	59.98	-4.49	-6.964%	39.378	-13.522	-25.561%	66.14	-3.8	-5.433%
random_word_delete	5.0	46.11	-18.36	-28.478%	31.332	-21.568	-40.770%	62.696	-7.244	-10.358%
swap_syn_word_emb	5.0	45.82	-18.65	-28.928%	30.529	-22.371	-42.288%	57.844	-12.096	-17.295%
swap_syn_word_net	5.0	46.94	-17.53	-27.191%	34.433	-18.467	-34.909%	57.643	-12.297	-17.582%
back_trans	5.0	60.83	-3.64	-5.646%	46.224	-6.676	-12.621%	68.925	-1.015	-1.451%
random_word_swap	5.0	61.84	-2.63	-4.079%	43.878	-9.022	-17.054%	68.078	-1.862	-2.662%
nonsense	5.0	1.04	-63.43	-98.387%	0.922	-51.978	-98.257%	51.127	-18.813	-26.899%

Table 45: Performance and decrease ratio of Single LoRA on CLIP-BART against text corruptions given severity 1 to 4.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	1.0	54.03	-11.31	-17.309%	41.294	-11.896	-22.364%	57.586	-15.994	-21.737%
typos	1.0	55.93	-9.41	-14.402%	42.36	-10.83	-20.362%	71.064	-2.516	-3.420%
keyboard	1.0	54.74	-10.6	-16.223%	41.278	-11.912	-22.394%	69.815	-3.765	-5.117%
spell_error	1.0	55.81	-9.53	-14.585%	42.956	-10.234	-19.241%	69.04	-4.54	-6.170%
random_char_insert	1.0	50.69	-14.65	-22.421%	34.457	-18.733	-35.219%	65.064	-8.516	-11.574%
random_char_replace	1.0	47.61	-17.73	-27.135%	31.754	-21.436	-40.301%	62.724	-10.856	-14.754%
random_char_swap	1.0	41.04	-24.3	-37.190%	27.413	-25.777	-48.462%	59.523	-14.057	-19.104%
random_char_delete	1.0	49.16	-16.18	-24.763%	33.877	-19.313	-36.310%	63.499	-10.081	-13.700%
random_word_insert	1.0	65.29	-0.05	-0.077%	47.09	-6.1	-11.468%	72.714	-0.866	-1.177%
random_word_delete	1.0	65.24	-0.1	-0.153%	48.243	-4.947	-9.301%	72.427	-1.153	-1.567%
swap_syn_word_emb	1.0	55.15	-10.19	-15.595%	42.407	-10.783	-20.272%	67.762	-5.818	-7.907%
swap_syn_word_net	1.0	57.75	-7.59	-11.616%	43.584	-9.606	-18.060%	71.336	-2.244	-3.049%
random_word_swap	1.0	65.29	-0.05	-0.077%	48.68	-4.51	-8.479%	73.331	-0.249	-0.338%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	2.0	53.46	-11.88	-18.182%	38.305	-14.885	-27.985%	65.609	-7.971	-10.833%
typos	2.0	55.05	-10.29	-15.748%	39.935	-13.255	-24.920%	66.758	-6.822	-9.272%
keyboard	2.0	54.0	-11.34	-17.355%	38.098	-15.092	-28.373%	66.815	-6.765	-9.194%
spell_error	2.0	55.24	-10.1	-15.458%	39.394	-13.796	-25.937%	66.499	-7.081	-9.623%
random_char_insert	2.0	40.12	-25.22	-38.598%	25.441	-27.749	-52.169%	59.236	-14.344	-19.494%
random_char_replace	2.0	35.78	-29.56	-45.240%	23.159	-30.031	-56.459%	57.414	-16.166	-21.971%
random_char_swap	2.0	32.25	-33.09	-50.643%	20.981	-32.209	-60.554%	54.701	-18.879	-25.658%
random_char_delete	2.0	38.83	-26.51	-40.572%	26.713	-26.477	-49.778%	57.83	-15.75	-21.406%
random_word_insert	2.0	63.88	-1.46	-2.234%	42.956	-10.234	-19.241%	71.509	-2.071	-2.815%
random_word_delete	2.0	59.92	-5.42	-8.295%	43.409	-9.781	-18.389%	69.399	-4.181	-5.683%
swap_syn_word_emb	2.0	54.19	-11.15	-17.065%	39.021	-14.169	-26.639%	62.452	-11.128	-15.124%
swap_syn_word_net	2.0	56.9	-8.44	-12.917%	41.342	-11.848	-22.275%	67.963	-5.617	-7.634%
random_word_swap	2.0	64.48	-0.86	-1.316%	47.027	-6.163	-11.588%	72.312	-1.268	-1.723%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	3.0	48.98	-16.36	-25.038%	31.643	-21.547	-40.510%	61.002	-12.578	-17.095%
typos	3.0	50.0	-15.34	-23.477%	33.082	-20.108	-37.805%	64.117	-9.463	-12.861%
keyboard	3.0	48.27	-17.07	-26.125%	31.643	-21.547	-40.510%	62.954	-10.626	-14.442%
spell_error	3.0	50.1	-15.24	-23.324%	33.018	-20.172	-37.924%	63.413	-10.167	-13.817%
random_char_insert	3.0	32.75	-32.59	-49.878%	21.697	-31.493	-59.209%	56.323	-17.257	-23.454%
random_char_replace	3.0	29.42	-35.92	-54.974%	19.343	-33.847	-63.634%	54.93	-18.65	-25.346%
random_char_swap	3.0	28.46	-36.88	-56.443%	19.407	-33.783	-63.514%	52.304	-21.276	-28.916%
random_char_delete	3.0	33.02	-32.32	-49.464%	22.452	-30.738	-57.789%	54.672	-18.908	-25.697%
random_word_insert	3.0	61.85	-3.49	-5.341%	39.521	-13.669	-25.698%	69.915	-3.665	-4.981%
random_word_delete	3.0	57.35	-7.99	-12.228%	39.696	-13.494	-25.369%	67.332	-6.248	-8.492%
swap_syn_word_emb	3.0	50.31	-15.03	-23.003%	33.408	-19.782	-37.192%	59.724	-13.856	-18.831%
swap_syn_word_net	3.0	53.93	-11.41	-17.463%	37.534	-15.656	-29.435%	64.791	-8.789	-11.945%
random_word_swap	3.0	63.77	-1.57	-2.403%	45.866	-7.324	-13.770%	71.953	-1.627	-2.211%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	4.0	42.16	-23.18	-35.476%	27.238	-25.952	-48.791%	57.528	-16.052	-21.815%
typos	4.0	41.83	-23.51	-35.981%	27.103	-26.087	-49.045%	60.212	-13.368	-18.167%
keyboard	4.0	39.16	-26.18	-40.067%	25.052	-28.138	-52.902%	59.782	-13.798	-18.753%
spell_error	4.0	41.9	-23.44	-35.874%	27.866	-25.324	-47.610%	58.949	-14.631	-19.884%
random_char_insert	4.0	28.5	-36.84	-56.382%	18.914	-34.276	-64.441%	54.112	-19.468	-26.458%
random_char_replace	4.0	25.34	-40.0	-61.218%	16.394	-36.796	-69.179%	53.495	-20.085	-27.297%
random_char_swap	4.0	25.75	-39.59	-60.591%	18.318	-34.872	-65.562%	53.021	-20.559	-27.940%
random_char_delete	4.0	29.86	-35.48	-54.301%	20.091	-33.099	-62.229%	53.596	-19.984	-27.160%
random_word_insert	4.0	59.19	-6.15	-9.412%	36.421	-16.769	-31.527%	69.097	-4.483	-6.092%
random_word_delete	4.0	51.52	-13.82	-21.151%	34.568	-18.622	-35.010%	65.581	-7.999	-10.872%
swap_syn_word_emb	4.0	46.82	-18.52	-28.344%	30.275	-22.915	-43.081%	58.346	-15.234	-20.703%
swap_syn_word_net	4.0	50.73	-14.61	-22.360%	35.244	-17.946	-33.739%	60.988	-12.592	-17.114%
random_word_swap	4.0	63.14	-2.2	-3.367%	44.983	-8.207	-15.429%	71.523	-2.057	-2.796%



Table 46: Performance and decrease ratio of Single LoRA on CLIP-BART against text corruptions given severity 5.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	5.0	38.86	-26.48	-40.526%	24.837	-28.353	-53.305%	55.519	-18.061	-24.546%
punctuation	5.0	64.49	-0.85	-1.301%	48.37	-4.82	-9.062%	72.987	-0.593	-0.806%
typos	5.0	29.97	-35.37	-54.132%	20.902	-32.288	-60.704%	52.519	-21.061	-28.623%
keyboard	5.0	27.27	-38.07	-58.264%	18.691	-34.499	-64.859%	51.17	-22.41	-30.457%
spell_error	5.0	35.33	-30.01	-45.929%	23.43	-29.76	-55.951%	55.375	-18.205	-24.741%
random_char_insert	5.0	25.29	-40.05	-61.295%	17.244	-35.946	-67.580%	53.194	-20.386	-27.706%
random_char_replace	5.0	21.98	-43.36	-66.361%	14.676	-38.514	-72.408%	51.399	-22.181	-30.145%
random_char_swap	5.0	25.14	-40.2	-61.524%	18.946	-34.244	-64.381%	52.088	-21.492	-29.208%
random_char_delete	5.0	27.67	-37.67	-57.652%	19.391	-33.799	-63.544%	51.916	-21.664	-29.443%
to_passive	5.0	62.35	-2.99	-4.576%	44.896	-8.294	-15.593%	71.537	-2.043	-2.776%
tense	5.0	64.42	-0.92	-1.408%	48.823	-4.367	-8.210%	73.26	-0.32	-0.435%
to_formal	5.0	64.85	-0.49	-0.750%	48.37	-4.82	-9.062%	73.331	-0.249	-0.338%
to_casual	5.0	61.93	-3.41	-5.219%	45.365	-7.825	-14.712%	71.882	-1.698	-2.308%
to_active	5.0	63.44	-1.9	-2.908%	47.519	-5.671	-10.661%	72.7	-0.88	-1.196%
double_denial	5.0	65.29	-0.05	-0.077%	49.229	-3.961	-7.447%	73.59	0.01	0.013%
insert_adv	5.0	60.31	-5.03	-7.698%	44.928	-8.262	-15.534%	71.178	-2.402	-3.264%
append_irr	5.0	56.4	-8.94	-13.682%	40.475	-12.715	-23.904%	66.054	-7.526	-10.228%
random_word_insert	5.0	53.97	-11.37	-17.401%	32.04	-21.15	-39.763%	67.203	-6.377	-8.667%
drop_nn	5.0	45.29	-20.05	-30.686%	30.068	-23.122	-43.470%	63.629	-9.951	-13.525%
drop_rand_one_nn	5.0	57.52	-7.82	-11.968%	41.859	-11.331	-21.303%	71.81	-1.77	-2.406%
drop_vb	5.0	56.85	-8.49	-12.994%	37.407	-15.783	-29.674%	70.188	-3.392	-4.610%
drop_vb_nn	5.0	42.7	-22.64	-34.650%	26.435	-26.755	-50.301%	60.456	-13.124	-17.836%
only_nn	5.0	30.67	-34.67	-53.061%	17.324	-35.866	-67.430%	54.873	-18.707	-25.424%
only_vb	5.0	50.27	-15.07	-23.064%	35.332	-17.858	-33.575%	67.346	-6.234	-8.472%
only_vb_nn	5.0	36.27	-29.07	-44.490%	20.512	-32.678	-61.436%	57.414	-16.166	-21.971%
drop_rand_one_vb	5.0	62.12	-3.22	-4.928%	44.339	-8.851	-16.640%	72.183	-1.397	-1.898%
drop_first	5.0	53.88	-11.46	-17.539%	35.936	-17.254	-32.439%	72.154	-1.426	-1.937%
drop_last	5.0	53.97	-11.37	-17.401%	42.01	-11.18	-21.019%	69.844	-3.736	-5.078%
drop_first_and_last	5.0	40.95	-24.39	-37.328%	29.814	-23.376	-43.948%	68.179	-5.401	-7.341%
shuffle_order	5.0	60.39	-4.95	-7.576%	38.019	-15.171	-28.523%	68.494	-5.086	-6.912%
random_word_delete	5.0	45.97	-19.37	-29.645%	30.394	-22.796	-42.857%	63.069	-10.511	-14.285%
swap_syn_word_emb	5.0	45.85	-19.49	-29.829%	29.44	-23.75	-44.651%	57.571	-16.009	-21.757%
swap_syn_word_net	5.0	47.78	-17.56	-26.875%	33.749	-19.441	-36.549%	59.423	-14.157	-19.240%
back_trans	5.0	61.59	-3.75	-5.739%	45.611	-7.579	-14.248%	72.384	-1.196	-1.625%
random_word_swap	5.0	62.73	-2.61	-3.994%	43.902	-9.288	-17.462%	71.021	-2.559	-3.478%
nonsense	5.0	0.06	-65.28	-99.908%	0.064	-53.126	-99.880%	51.026	-22.554	-30.652%

Table 47: Performance and decrease ratio of Single Prompt on CLIP-BART against text corruptions given severity 1 to 4.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	1.0	39.57	-4.43	-10.068%	33.789	-3.751	-9.992%	51.629	-0.321	-0.618%
typos	1.0	38.99	-5.01	-11.386%	33.447	-4.093	-10.902%	52.289	0.339	0.653%
keyboard	1.0	38.12	-5.88	-13.364%	32.787	-4.753	-12.660%	51.844	-0.106	-0.203%
spell_error	1.0	38.42	-5.58	-12.682%	33.686	-3.854	-10.267%	52.189	0.239	0.460%
random_char_insert	1.0	37.28	-6.72	-15.273%	29.925	-7.615	-20.284%	51.672	-0.278	-0.535%
random_char_replace	1.0	35.6	-8.4	-19.091%	27.89	-9.65	-25.706%	52.361	0.411	0.791%
random_char_swap	1.0	32.3	-11.7	-26.591%	24.694	-12.846	-34.220%	52.002	0.052	0.101%
random_char_delete	1.0	35.77	-8.23	-18.705%	28.621	-8.919	-23.758%	51.758	-0.192	-0.369%
random_word_insert	1.0	43.95	-0.05	-0.114%	36.953	-0.587	-1.563%	52.246	0.296	0.570%
random_word_delete	1.0	43.86	-0.14	-0.318%	36.468	-1.072	-2.854%	51.787	-0.163	-0.314%
swap_syn_word_emb	1.0	39.76	-4.24	-9.636%	34.998	-2.542	-6.772%	52.088	0.138	0.266%
swap_syn_word_net	1.0	41.92	-2.08	-4.727%	35.085	-2.455	-6.540%	51.988	0.038	0.073%
random_word_swap	1.0	43.96	-0.04	-0.091%	37.279	-0.261	-0.694%	51.916	-0.034	-0.065%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	2.0	39.83	-4.17	-9.477%	32.644	-4.896	-13.041%	52.189	0.239	0.460%
typos	2.0	38.31	-5.69	-12.932%	31.857	-5.683	-15.138%	52.131	0.181	0.349%
keyboard	2.0	37.82	-6.18	-14.045%	31.205	-6.335	-16.875%	51.514	-0.436	-0.839%
spell_error	2.0	38.19	-5.81	-13.205%	32.43	-5.11	-13.613%	51.902	-0.048	-0.093%
random_char_insert	2.0	33.14	-10.86	-24.682%	25.219	-12.321	-32.822%	51.945	-0.005	-0.010%
random_char_replace	2.0	30.73	-13.27	-30.159%	23.231	-14.309	-38.117%	51.959	0.009	0.018%
random_char_swap	2.0	28.42	-15.58	-35.409%	21.061	-16.479	-43.898%	52.131	0.181	0.349%
random_char_delete	2.0	30.9	-13.1	-29.773%	23.875	-13.665	-36.401%	51.801	-0.149	-0.286%
random_word_insert	2.0	43.38	-0.62	-1.409%	35.538	-2.002	-5.332%	52.175	0.225	0.432%
random_word_delete	2.0	39.26	-4.74	-10.773%	32.724	-4.816	-12.830%	52.103	0.153	0.294%
swap_syn_word_emb	2.0	39.47	-4.53	-10.295%	33.376	-4.164	-11.093%	51.787	-0.163	-0.314%
swap_syn_word_net	2.0	41.73	-2.27	-5.159%	34.274	-3.266	-8.700%	52.49	0.54	1.040%
random_word_swap	2.0	43.28	-0.72	-1.636%	36.445	-1.095	-2.918%	51.801	-0.149	-0.286%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	3.0	38.04	-5.96	-13.545%	29.122	-8.418	-22.423%	52.361	0.411	0.791%
typos	3.0	36.02	-7.98	-18.136%	27.977	-9.563	-25.473%	52.045	0.095	0.184%
keyboard	3.0	35.37	-8.63	-19.614%	27.373	-10.167	-27.083%	51.801	-0.149	-0.286%
spell_error	3.0	35.73	-8.27	-18.795%	28.494	-9.046	-24.096%	52.017	0.067	0.128%
random_char_insert	3.0	30.11	-13.89	-31.568%	23.462	-14.078	-37.502%	52.074	0.124	0.239%
random_char_replace	3.0	28.27	-15.73	-35.750%	21.045	-16.495	-43.941%	51.902	-0.048	-0.093%
random_char_swap	3.0	26.64	-17.36	-39.455%	19.661	-17.879	-47.626%	51.974	0.024	0.045%
random_char_delete	3.0	28.16	-15.84	-36.000%	21.466	-16.074	-42.818%	52.734	0.784	1.510%
random_word_insert	3.0	42.88	-1.12	-2.545%	34.409	-3.131	-8.340%	51.773	-0.177	-0.341%
random_word_delete	3.0	36.96	-7.04	-16.000%	29.114	-8.426	-22.445%	51.816	-0.134	-0.259%
swap_syn_word_emb	3.0	37.35	-6.65	-15.114%	30.776	-6.764	-18.018%	51.816	-0.134	-0.259%
swap_syn_word_net	3.0	40.58	-3.42	-7.773%	31.897	-5.643	-15.032%	51.945	-0.005	-0.010%
random_word_swap	3.0	43.21	-0.79	-1.795%	35.475	-2.065	-5.502%	51.773	-0.177	-0.341%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	4.0	35.04	-8.96	-20.364%	26.268	-11.272	-30.026%	51.974	0.024	0.045%
keyboard	4.0	30.96	-13.04	-29.636%	23.048	-14.492	-38.604%	51.816	-0.134	-0.259%
spell_error	4.0	31.55	-12.45	-28.295%	25.123	-12.417	-33.076%	51.801	-0.149	-0.286%
random_char_insert	4.0	28.57	-15.43	-35.068%	21.053	-16.487	-43.919%	51.615	-0.335	-0.645%
random_char_replace	4.0	27.02	-16.98	-38.591%	20.114	-17.426	-46.419%	52.361	0.411	0.791%
random_char_swap	4.0	25.94	-18.06	-41.045%	19.534	-18.006	-47.965%	51.715	-0.235	-0.452%
random_char_delete	4.0	26.91	-17.09	-38.841%	19.82	-17.72	-47.202%	52.189	0.239	0.460%
random_word_insert	4.0	42.33	-1.67	-3.795%	32.946	-4.594	-12.237%	51.859	-0.091	-0.176%
random_word_delete	4.0	32.87	-11.13	-25.295%	26.133	-11.407	-30.386%	51.931	-0.019	-0.037%
swap_syn_word_emb	4.0	35.94	-8.06	-18.318%	29.766	-7.774	-20.708%	51.816	-0.134	-0.259%
swap_syn_word_net	4.0	39.88	-4.12	-9.364%	30.037	-7.503	-19.988%	51.672	-0.278	-0.535%
random_word_swap	4.0	42.56	-1.44	-3.273%	34.815	-2.725	-7.260%	52.017	0.067	0.128%

Table 48: Performance and decrease ratio of Single Prompt on CLIP-BART against text corruptions given severity 5.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	5.0	34.13	-9.87	-22.432%	24.654	-12.886	-34.326%	51.873	-0.077	-0.148%
punctuation	5.0	42.47	-1.53	-3.477%	34.751	-2.789	-7.429%	51.959	0.009	0.018%
typos	5.0	26.09	-17.91	-40.705%	19.367	-18.173	-48.409%	51.744	-0.206	-0.397%
keyboard	5.0	24.86	-19.14	-43.500%	18.501	-19.039	-50.718%	51.83	-0.12	-0.231%
spell_error	5.0	28.3	-15.7	-35.682%	22.516	-15.024	-40.023%	51.859	-0.091	-0.176%
random_char_insert	5.0	27.07	-16.93	-38.477%	20.17	-17.37	-46.270%	51.543	-0.407	-0.783%
random_char_replace	5.0	25.81	-18.19	-41.341%	19.463	-18.077	-48.155%	52.246	0.296	0.570%
random_char_swap	5.0	25.38	-18.62	-42.318%	18.898	-18.642	-49.659%	51.572	-0.378	-0.728%
random_char_delete	5.0	25.94	-18.06	-41.045%	19.502	-18.038	-48.049%	52.189	0.239	0.460%
to_passive	5.0	40.84	-3.16	-7.182%	33.439	-4.101	-10.923%	52.419	0.469	0.902%
tense	5.0	43.8	-0.2	-0.455%	37.462	-0.078	-0.207%	51.816	-0.134	-0.259%
to_formal	5.0	43.79	-0.21	-0.477%	37.359	-0.181	-0.482%	52.289	0.339	0.653%
to_casual	5.0	41.04	-2.96	-6.727%	33.749	-3.791	-10.097%	52.318	0.368	0.709%
to_active	5.0	42.52	-1.48	-3.364%	36.071	-1.469	-3.913%	51.945	-0.005	-0.010%
double_denial	5.0	43.93	-0.07	-0.159%	37.542	0.002	0.005%	51.974	0.024	0.045%
insert_adv	5.0	42.61	-1.39	-3.159%	35.912	-1.628	-4.337%	52.304	0.354	0.681%
append_irr	5.0	35.1	-8.9	-20.227%	26.833	-10.707	-28.523%	52.017	0.067	0.128%
random_word_insert	5.0	41.52	-2.48	-5.636%	32.096	-5.444	-14.503%	51.443	-0.507	-0.977%
drop_nn	5.0	35.18	-8.82	-20.045%	27.874	-9.666	-25.748%	52.074	0.124	0.239%
drop_rand_one_nn	5.0	39.3	-4.7	-10.682%	33.415	-4.125	-10.987%	51.974	0.024	0.045%
drop_vb	5.0	25.14	-18.86	-42.864%	20.385	-17.155	-45.698%	52.318	0.368	0.709%
drop_vb_nn	5.0	25.92	-18.08	-41.091%	17.539	-20.001	-53.280%	52.462	0.512	0.985%
only_nn	5.0	16.21	-27.79	-63.159%	12.824	-24.716	-65.839%	51.514	-0.436	-0.839%
only_vb	5.0	37.9	-6.1	-13.864%	30.712	-6.828	-18.188%	51.959	0.009	0.018%
only_vb_nn	5.0	35.09	-8.91	-20.250%	28.327	-9.213	-24.541%	51.543	-0.407	-0.783%
drop_rand_one_vb	5.0	29.64	-14.36	-32.636%	25.64	-11.9	-31.700%	51.959	0.009	0.018%
drop_first	5.0	20.03	-23.97	-54.477%	15.249	-22.291	-59.380%	52.16	0.21	0.405%
drop_last	5.0	42.14	-1.86	-4.227%	36.683	-0.857	-2.283%	52.203	0.253	0.487%
drop_first_and_last	5.0	17.78	-26.22	-59.591%	14.756	-22.784	-60.693%	52.218	0.268	0.515%
shuffle_order	5.0	40.09	-3.91	-8.886%	28.955	-8.585	-22.868%	52.304	0.354	0.681%
random_word_delete	5.0	29.11	-14.89	-33.841%	23.414	-14.126	-37.629%	52.16	0.21	0.405%
swap_syn_word_emb	5.0	35.43	-8.57	-19.477%	29.146	-8.394	-22.360%	52.002	0.052	0.101%
swap_syn_word_net	5.0	35.96	-8.04	-18.273%	28.693	-8.847	-23.567%	51.629	-0.321	-0.618%
back_trans	5.0	43.33	-0.67	-1.523%	36.357	-1.183	-3.151%	51.931	-0.019	-0.037%
random_word_swap	5.0	42.27	-1.73	-3.932%	33.956	-3.584	-9.547%	51.945	-0.005	-0.010%
nonsense	5.0	24.61	-19.39	-44.068%	18.0	-19.54	-52.052%	51.959	0.009	0.018%

Table 49: Performance and decrease ratio of Full Finetuning on CLIP-T5 against text corruptions given severity 1 to 4.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	1.0	56.07	-10.22	-15.417%	44.84	-11.98	-21.084%	60.686	-13.374	-18.058%
punctuation	1.0	65.39	-0.9	-1.358%	54.333	-2.487	-4.377%	73.575	-0.485	-0.654%
typos	1.0	58.19	-8.1	-12.219%	47.464	-9.356	-16.466%	70.977	-3.083	-4.162%
keyboard	1.0	56.04	-10.25	-15.462%	45.047	-11.773	-20.720%	70.733	-3.327	-4.492%
spell_error	1.0	58.06	-8.23	-12.415%	47.694	-9.126	-16.061%	70.777	-3.283	-4.434%
random_char_insert	1.0	52.68	-13.61	-20.531%	35.721	-21.099	-37.133%	66.04	-8.02	-10.829%
random_char_replace	1.0	48.02	-18.27	-27.561%	32.088	-24.732	-43.527%	64.03	-10.03	-13.542%
random_char_swap	1.0	41.2	-25.09	-37.849%	26.801	-30.019	-52.832%	59.767	-14.293	-19.299%
random_char_delete	1.0	50.56	-15.73	-23.729%	35.976	-20.844	-36.685%	64.849	-9.211	-12.438%
random_word_insert	1.0	66.18	-0.11	-0.166%	52.592	-4.228	-7.441%	73.633	-0.427	-0.577%
random_word_delete	1.0	66.09	-0.2	-0.302%	54.412	-2.408	-4.237%	72.7	-1.36	-1.837%
swap_syn_word_emb	1.0	55.34	-10.95	-16.518%	46.621	-10.199	-17.950%	67.935	-6.125	-8.271%
swap_syn_word_net	1.0	58.79	-7.5	-11.314%	48.14	-8.68	-15.277%	71.064	-2.996	-4.046%
random_word_swap	1.0	66.19	-0.1	-0.151%	54.412	-2.408	-4.237%	73.231	-0.829	-1.119%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	2.0	55.61	-10.68	-16.111%	40.412	-16.408	-28.877%	68.322	-5.738	-7.748%
punctuation	2.0	65.31	-0.98	-1.478%	54.023	-2.797	-4.923%	74.135	0.075	0.102%
typos	2.0	56.71	-9.58	-14.452%	42.853	-13.967	-24.582%	68.193	-5.867	-7.922%
keyboard	2.0	55.57	-10.72	-16.171%	40.388	-16.432	-28.919%	68.064	-5.996	-8.097%
spell_error	2.0	57.71	-8.58	-12.943%	44.785	-12.035	-21.182%	68.006	-6.054	-8.174%
random_char_insert	2.0	40.83	-25.46	-38.407%	24.503	-32.317	-56.876%	59.811	-14.249	-19.240%
random_char_replace	2.0	33.87	-32.42	-48.906%	19.693	-37.127	-65.341%	56.969	-17.091	-23.078%
random_char_swap	2.0	29.57	-36.72	-55.393%	18.016	-38.804	-68.294%	54.256	-19.804	-26.741%
random_char_delete	2.0	39.07	-27.22	-41.062%	25.576	-31.244	-54.987%	58.059	-16.001	-21.605%
random_word_insert	2.0	63.61	-2.68	-4.043%	47.909	-8.911	-15.683%	72.7	-1.36	-1.837%
random_word_delete	2.0	60.78	-5.51	-8.312%	48.974	-7.846	-13.808%	69.772	-4.288	-5.790%
swap_syn_word_emb	2.0	54.79	-11.5	-17.348%	42.447	-14.373	-25.295%	62.739	-11.321	-15.287%
swap_syn_word_net	2.0	58.08	-8.21	-12.385%	45.731	-11.089	-19.517%	69.068	-4.992	-6.740%
random_word_swap	2.0	64.72	-1.57	-2.368%	52.043	-4.777	-8.407%	72.599	-1.461	-1.972%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	3.0	50.9	-15.39	-23.216%	33.352	-23.468	-41.303%	63.715	-10.345	-13.969%
punctuation	3.0	65.58	-0.71	-1.071%	54.476	-2.344	-4.125%	73.604	-0.456	-0.616%
typos	3.0	52.43	-13.86	-20.908%	34.783	-22.037	-38.784%	65.035	-9.025	-12.186%
keyboard	3.0	50.05	-16.24	-24.498%	33.074	-23.746	-41.792%	63.643	-10.417	-14.066%
spell_error	3.0	53.33	-12.96	-19.550%	37.55	-19.27	-33.915%	64.088	-9.972	-13.465%
random_char_insert	3.0	30.69	-35.6	-53.703%	18.389	-38.431	-67.636%	56.667	-17.393	-23.485%
random_char_replace	3.0	23.86	-42.43	-64.007%	13.555	-43.265	-76.143%	53.524	-20.536	-27.729%
random_char_swap	3.0	23.29	-43.0	-64.866%	14.382	-42.438	-74.688%	51.887	-22.173	-29.939%
random_char_delete	3.0	31.76	-34.53	-52.089%	20.043	-36.777	-64.726%	55.16	-18.9	-25.520%
random_word_insert	3.0	62.9	-3.39	-5.114%	43.075	-13.745	-24.190%	71.58	-2.48	-3.348%
random_word_delete	3.0	57.36	-8.93	-13.471%	44.3	-12.52	-22.035%	68.552	-5.508	-7.438%
swap_syn_word_emb	3.0	50.63	-15.66	-23.623%	35.936	-20.884	-36.755%	59.911	-14.149	-19.105%
swap_syn_word_net	3.0	54.35	-11.94	-18.012%	40.499	-16.321	-28.724%	64.518	-9.542	-12.884%
random_word_swap	3.0	63.53	-2.76	-4.164%	49.801	-7.019	-12.353%	71.178	-2.882	-3.891%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	4.0	44.74	-21.55	-32.509%	28.017	-28.803	-50.691%	61.289	-12.771	-17.244%
punctuation	4.0	65.59	-0.7	-1.056%	54.365	-2.455	-4.321%	73.992	-0.068	-0.092%
typos	4.0	44.4	-21.89	-33.022%	28.431	-28.389	-49.964%	61.705	-12.355	-16.682%
spell_error	4.0	45.25	-21.04	-31.739%	31.166	-25.654	-45.150%	61.418	-12.642	-17.070%
random_char_insert	4.0	22.93	-43.36	-65.410%	15.018	-41.802	-73.569%	54.385	-19.675	-26.566%
random_char_replace	4.0	16.96	-49.33	-74.415%	8.881	-47.939	-84.371%	52.619	-21.441	-28.950%
random_char_swap	4.0	19.0	-47.29	-71.338%	11.989	-44.831	-78.900%	51.816	-22.244	-30.036%
random_char_delete	4.0	26.11	-40.18	-60.612%	16.354	-40.466	-71.218%	53.725	-20.335	-27.458%
random_word_insert	4.0	61.25	-5.04	-7.603%	39.307	-17.513	-30.822%	70.748	-3.312	-4.472%
random_word_delete	4.0	50.96	-15.33	-23.126%	37.939	-18.881	-33.229%	65.509	-8.551	-11.546%
swap_syn_word_emb	4.0	46.4	-19.89	-30.005%	32.938	-23.882	-42.030%	57.126	-16.934	-22.865%
swap_syn_word_net	4.0	51.32	-14.97	-22.583%	37.581	-19.239	-33.859%	60.988	-13.072	-17.651%
random_word_swap	4.0	63.09	-3.2	-4.827%	47.877	-8.943	-15.739%	70.762	-3.298	-4.453%

Table 50: Performance and decrease ratio of Full Finetuning on CLIP-T5 against text corruptions given severity 5.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	5.0	41.68	-24.61	-37.125%	25.592	-31.228	-54.959%	57.227	-16.833	-22.729%
punctuation	5.0	65.39	-0.9	-1.358%	54.055	-2.765	-4.867%	73.805	-0.255	-0.344%
typos	5.0	31.24	-35.05	-52.874%	20.393	-36.427	-64.110%	53.854	-20.206	-27.283%
keyboard	5.0	26.9	-39.39	-59.421%	18.071	-38.749	-68.196%	52.72	-21.34	-28.815%
spell_error	5.0	38.79	-27.5	-41.484%	26.864	-29.956	-52.720%	58.634	-15.426	-20.830%
random_char_insert	5.0	17.18	-49.11	-74.084%	11.759	-45.061	-79.305%	52.706	-21.354	-28.834%
random_char_replace	5.0	11.99	-54.3	-81.913%	6.71	-50.11	-88.191%	52.289	-21.771	-29.396%
random_char_swap	5.0	16.77	-49.52	-74.702%	12.14	-44.68	-78.634%	52.232	-21.828	-29.473%
random_char_delete	5.0	22.44	-43.85	-66.149%	14.573	-42.247	-74.352%	52.16	-21.9	-29.570%
to_passive	5.0	63.3	-2.99	-4.510%	52.003	-4.817	-8.477%	72.083	-1.977	-2.670%
tense	5.0	65.47	-0.82	-1.237%	54.826	-1.994	-3.510%	73.963	-0.097	-0.131%
to_formal	5.0	65.84	-0.45	-0.679%	54.571	-2.249	-3.957%	73.762	-0.298	-0.402%
to_casual	5.0	63.61	-2.68	-4.043%	52.027	-4.793	-8.435%	72.269	-1.791	-2.418%
to_active	5.0	64.81	-1.48	-2.233%	54.269	-2.551	-4.489%	73.274	-0.786	-1.061%
double_denial	5.0	66.22	-0.07	-0.106%	55.565	-1.255	-2.208%	74.107	0.047	0.063%
insert_adv	5.0	61.91	-4.38	-6.607%	50.779	-6.041	-10.632%	71.207	-2.853	-3.852%
append_irr	5.0	64.51	-1.78	-2.685%	48.426	-8.394	-14.773%	67.317	-6.743	-9.104%
random_word_insert	5.0	58.7	-7.59	-11.450%	35.793	-21.027	-37.007%	69.585	-4.475	-6.042%
drop_nn	5.0	43.96	-22.33	-33.685%	31.627	-25.193	-44.339%	63.873	-10.187	-13.756%
drop_rand_one_nn	5.0	55.85	-10.44	-15.749%	45.699	-11.121	-19.573%	71.107	-2.953	-3.988%
drop_vb	5.0	56.77	-9.52	-14.361%	38.559	-18.261	-32.138%	70.934	-3.126	-4.220%
drop_vb_nn	5.0	42.66	-23.63	-35.646%	26.189	-30.631	-53.910%	60.844	-13.216	-17.845%
only_nn	5.0	15.14	-51.15	-77.161%	14.462	-42.358	-74.548%	54.672	-19.388	-26.179%
only_vb	5.0	51.32	-14.97	-22.583%	40.483	-16.337	-28.752%	67.159	-6.901	-9.317%
only_vb_nn	5.0	42.42	-23.87	-36.008%	28.59	-28.23	-49.684%	57.629	-16.431	-22.186%
drop_rand_one_vb	5.0	61.59	-4.7	-7.090%	46.08	-10.74	-18.901%	72.241	-1.819	-2.457%
drop_first	5.0	58.55	-7.74	-11.676%	42.932	-13.888	-24.442%	72.442	-1.618	-2.185%
drop_last	5.0	51.9	-14.39	-21.708%	46.359	-10.461	-18.411%	69.714	-4.346	-5.868%
drop_first_and_last	5.0	38.01	-28.28	-42.661%	31.953	-24.867	-43.765%	68.58	-5.48	-7.399%
shuffle_order	5.0	57.01	-9.28	-13.999%	38.265	-18.555	-32.655%	66.557	-7.503	-10.131%
random_word_delete	5.0	42.79	-23.5	-35.450%	30.919	-25.901	-45.584%	62.882	-11.178	-15.093%
swap_syn_word_emb	5.0	46.23	-20.06	-30.261%	31.969	-24.851	-43.737%	57.887	-16.173	-21.837%
swap_syn_word_net	5.0	47.24	-19.05	-28.737%	37.558	-19.262	-33.901%	59.294	-14.766	-19.938%
back_trans	5.0	62.6	-3.69	-5.566%	51.503	-5.317	-9.358%	72.944	-1.116	-1.507%
random_word_swap	5.0	61.84	-4.45	-6.713%	46.542	-10.278	-18.089%	70.461	-3.599	-4.860%
nonsense	5.0	0.0	-66.29	-100.000%	12.339	-44.481	-78.284%	51.227	-22.833	-30.830%

Table 51: Performance and decrease ratio of Hyperformer on CLIP-T5 against text corruptions given severity 1 to 4.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	1.0	54.25	-10.93	-16.769%	44.705	-9.945	-18.198%	58.691	-11.869	-16.821%
punctuation	1.0	64.64	-0.54	-0.828%	52.457	-2.193	-4.013%	70.647	0.087	0.124%
typos	1.0	56.88	-8.3	-12.734%	47.05	-7.6	-13.906%	68.982	-1.578	-2.236%
spell_error	1.0	56.94	-8.24	-12.642%	46.573	-8.077	-14.779%	68.064	-2.496	-3.538%
random_char_insert	1.0	50.88	-14.3	-21.939%	37.001	-17.649	-32.294%	64.762	-5.798	-8.216%
random_char_replace	1.0	46.86	-18.32	-28.107%	33.765	-20.885	-38.215%	61.705	-8.855	-12.549%
random_char_swap	1.0	40.92	-24.26	-37.220%	27.699	-26.951	-49.315%	58.174	-12.386	-17.554%
random_char_delete	1.0	49.57	-15.61	-23.949%	36.723	-17.927	-32.804%	63.557	-7.003	-9.925%
random_word_insert	1.0	65.13	-0.05	-0.077%	50.97	-3.68	-6.734%	70.188	-0.372	-0.527%
random_word_delete	1.0	65.01	-0.17	-0.261%	52.409	-2.241	-4.101%	69.528	-1.032	-1.463%
swap_syn_word_emb	1.0	54.91	-10.27	-15.756%	46.836	-7.814	-14.299%	65.868	-4.692	-6.650%
swap_syn_word_net	1.0	58.65	-6.53	-10.018%	47.456	-7.194	-13.164%	68.58	-1.98	-2.805%
random_word_swap	1.0	65.09	-0.09	-0.138%	52.767	-1.883	-3.446%	69.844	-0.716	-1.015%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	2.0	53.56	-11.62	-17.828%	40.444	-14.206	-25.995%	64.978	-5.582	-7.911%
punctuation	2.0	64.71	-0.47	-0.721%	52.139	-2.511	-4.595%	70.274	-0.286	-0.405%
typos	2.0	55.96	-9.22	-14.145%	42.36	-12.29	-22.489%	66.399	-4.161	-5.897%
spell_error	2.0	56.7	-8.48	-13.010%	44.093	-10.557	-19.318%	65.652	-4.908	-6.955%
random_char_insert	2.0	40.34	-24.84	-38.110%	27.588	-27.062	-49.519%	58.49	-12.07	-17.106%
random_char_replace	2.0	35.49	-29.69	-45.551%	24.249	-30.401	-55.629%	55.519	-15.041	-21.317%
random_char_swap	2.0	31.74	-33.44	-51.304%	18.85	-35.8	-65.507%	52.605	-17.955	-25.446%
random_char_delete	2.0	38.59	-26.59	-40.795%	26.578	-28.072	-51.367%	57.643	-12.917	-18.306%
random_word_insert	2.0	63.76	-1.42	-2.179%	47.973	-6.677	-12.218%	69.14	-1.42	-2.012%
random_word_delete	2.0	60.14	-5.04	-7.732%	47.265	-7.385	-13.513%	67.159	-3.401	-4.819%
swap_syn_word_emb	2.0	54.15	-11.03	-16.922%	43.608	-11.042	-20.205%	62.007	-8.553	-12.122%
swap_syn_word_net	2.0	58.08	-7.1	-10.893%	45.158	-9.492	-17.368%	66.212	-4.348	-6.162%
random_word_swap	2.0	63.54	-1.64	-2.516%	50.7	-3.95	-7.228%	69.528	-1.032	-1.463%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	3.0	48.9	-16.28	-24.977%	33.908	-20.742	-37.954%	62.322	-8.238	-11.675%
punctuation	3.0	64.59	-0.59	-0.905%	52.361	-2.289	-4.188%	70.159	-0.401	-0.568%
typos	3.0	51.02	-14.16	-21.724%	35.864	-18.786	-34.375%	63.772	-6.788	-9.620%
spell_error	3.0	51.79	-13.39	-20.543%	37.995	-16.655	-30.476%	63.227	-7.333	-10.393%
random_char_insert	3.0	33.48	-31.7	-48.635%	22.571	-32.079	-58.699%	54.816	-15.744	-22.314%
random_char_replace	3.0	30.02	-35.16	-53.943%	19.097	-35.553	-65.056%	52.232	-18.328	-25.975%
random_char_swap	3.0	27.97	-37.21	-57.088%	14.653	-39.997	-73.188%	51.328	-19.232	-27.257%
random_char_delete	3.0	32.67	-32.51	-49.877%	20.798	-33.852	-61.943%	54.213	-16.347	-23.168%
random_word_insert	3.0	63.1	-2.08	-3.191%	43.64	-11.01	-20.147%	69.112	-1.448	-2.053%
random_word_delete	3.0	57.38	-7.8	-11.967%	43.314	-11.336	-20.743%	66.356	-4.204	-5.959%
swap_syn_word_emb	3.0	50.18	-15.0	-23.013%	38.384	-16.266	-29.763%	58.375	-12.185	-17.269%
swap_syn_word_net	3.0	54.48	-10.7	-16.416%	40.571	-14.079	-25.762%	63.341	-7.219	-10.230%
random_word_swap	3.0	63.53	-2.76	-4.164%	49.801	-7.019	-12.353%	71.178	-2.882	-3.891%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	4.0	42.03	-23.15	-35.517%	28.717	-25.933	-47.453%	58.49	-12.07	-17.106%
punctuation	4.0	64.62	-0.56	-0.859%	52.298	-2.352	-4.304%	70.518	-0.042	-0.059%
typos	4.0	42.24	-22.94	-35.195%	29.997	-24.653	-45.111%	60.456	-10.104	-14.319%
spell_error	4.0	44.06	-21.12	-32.403%	32.318	-22.332	-40.863%	60.729	-9.831	-13.933%
random_char_insert	4.0	29.46	-35.72	-54.802%	19.145	-35.505	-64.969%	52.361	-18.199	-25.792%
random_char_replace	4.0	27.43	-37.75	-57.917%	16.243	-38.407	-70.279%	50.754	-19.806	-28.070%
random_char_swap	4.0	26.3	-38.88	-59.650%	12.514	-42.136	-77.102%	50.897	-19.663	-27.867%
random_char_delete	4.0	29.24	-35.94	-55.140%	15.837	-38.813	-71.021%	52.002	-18.558	-26.301%
random_word_insert	4.0	61.76	-3.42	-5.247%	40.642	-14.008	-25.631%	68.997	-1.563	-2.216%
random_word_delete	4.0	51.41	-13.77	-21.126%	37.311	-17.339	-31.727%	63.93	-6.63	-9.396%
swap_syn_word_emb	4.0	46.37	-18.81	-28.859%	35.602	-19.048	-34.855%	56.61	-13.95	-19.771%
swap_syn_word_net	4.0	51.49	-13.69	-21.003%	38.122	-16.528	-30.243%	60.643	-9.917	-14.055%
random_word_swap	4.0	61.82	-3.36	-5.155%	47.71	-6.94	-12.698%	68.265	-2.295	-3.253%

Table 52: Performance and decrease ratio of Hyperformer on CLIP-T5 against text corruptions given severity 5.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	5.0	38.87	-26.31	-40.365%	26.109	-28.541	-52.225%	55.189	-15.371	-21.785%
punctuation	5.0	64.59	-0.59	-0.905%	52.488	-2.162	-3.955%	70.375	-0.185	-0.263%
typos	5.0	29.7	-35.48	-54.434%	20.639	-34.011	-62.234%	52.806	-17.754	-25.161%
keyboard	5.0	26.47	-38.71	-59.389%	18.532	-36.118	-66.089%	51.758	-18.802	-26.646%
spell_error	5.0	37.8	-27.38	-42.007%	27.914	-26.736	-48.923%	57.844	-12.716	-18.021%
random_char_insert	5.0	27.43	-37.75	-57.917%	17.189	-37.461	-68.548%	51.17	-19.39	-27.480%
random_char_replace	5.0	26.18	-39.0	-59.834%	15.169	-39.481	-72.243%	50.84	-19.72	-27.948%
random_char_swap	5.0	25.84	-39.34	-60.356%	12.403	-42.247	-77.305%	51.572	-18.988	-26.911%
random_char_delete	5.0	27.25	-37.93	-58.193%	13.786	-40.864	-74.774%	51.945	-18.615	-26.382%
to_passive	5.0	62.68	-2.5	-3.836%	50.318	-4.332	-7.927%	68.107	-2.453	-3.477%
tense	5.0	64.34	-0.84	-1.289%	53.458	-1.192	-2.180%	70.504	-0.056	-0.080%
to_formal	5.0	64.71	-0.47	-0.721%	52.687	-1.963	-3.592%	69.987	-0.573	-0.812%
to_casual	5.0	62.48	-2.7	-4.142%	50.111	-4.539	-8.305%	69.485	-1.075	-1.524%
to_active	5.0	63.79	-1.39	-2.133%	52.52	-2.13	-3.897%	69.614	-0.946	-1.341%
double_denial	5.0	65.13	-0.05	-0.077%	53.602	-1.048	-1.919%	70.561	0.001	0.002%
insert_adv	5.0	61.04	-4.14	-6.352%	50.62	-4.03	-7.374%	68.537	-2.023	-2.867%
append_irr	5.0	62.95	-2.23	-3.421%	45.262	-9.388	-17.179%	64.016	-6.544	-9.274%
random_word_insert	5.0	59.59	-5.59	-8.576%	37.534	-17.116	-31.320%	68.25	-2.31	-3.273%
drop_nn	5.0	45.81	-19.37	-29.718%	33.376	-21.274	-38.928%	63.054	-7.506	-10.637%
drop_rand_one_nn	5.0	56.58	-8.6	-13.194%	46.009	-8.641	-15.812%	68.193	-2.367	-3.355%
drop_vb	5.0	57.72	-7.46	-11.445%	37.2	-17.45	-31.931%	68.781	-1.779	-2.521%
drop_vb_nn	5.0	46.33	-18.85	-28.920%	24.312	-30.338	-55.513%	61.547	-9.013	-12.773%
only_nn	5.0	33.76	-31.42	-48.205%	13.85	-40.8	-74.658%	53.165	-17.395	-24.653%
only_vb	5.0	52.2	-12.98	-19.914%	39.521	-15.129	-27.683%	63.715	-6.845	-9.701%
only_vb_nn	5.0	41.64	-23.54	-36.115%	29.369	-25.281	-46.260%	55.993	-14.567	-20.645%
drop_rand_one_vb	5.0	62.16	-3.02	-4.633%	45.421	-9.229	-16.888%	69.413	-1.147	-1.626%
drop_first	5.0	58.75	-6.43	-9.865%	41.334	-13.316	-24.366%	69.384	-1.176	-1.666%
drop_last	5.0	52.99	-12.19	-18.702%	47.042	-7.608	-13.920%	67.719	-2.841	-4.026%
drop_first_and_last	5.0	46.58	-18.6	-28.536%	33.646	-21.004	-38.434%	66.959	-3.601	-5.104%
shuffle_order	5.0	57.7	-7.48	-11.476%	39.426	-15.224	-27.857%	65.839	-4.721	-6.691%
random_word_delete	5.0	46.23	-18.95	-29.073%	31.762	-22.888	-41.881%	62.265	-8.295	-11.756%
swap_syn_word_emb	5.0	45.5	-19.68	-30.193%	34.568	-20.082	-36.746%	56.926	-13.634	-19.323%
swap_syn_word_net	5.0	47.61	-17.57	-26.956%	36.572	-18.078	-33.080%	58.088	-12.472	-17.676%
back_trans	5.0	61.99	-3.19	-4.894%	50.541	-4.109	-7.519%	69.987	-0.573	-0.812%
random_word_swap	5.0	61.02	-4.16	-6.382%	46.414	-8.236	-15.070%	67.36	-3.2	-4.535%
nonsense	5.0	15.33	-49.85	-76.481%	3.999	-50.651	-92.682%	50.768	-19.792	-28.050%

Table 53: Performance and decrease ratio of Multiple Adapters on CLIP-T5 against text corruptions given severity 1 to 4.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	1.0	56.21	-9.94	-15.026%	42.368	-13.292	-23.881%	51.486	-0.454	-0.875%
punctuation	1.0	65.86	-0.29	-0.438%	52.25	-3.41	-6.127%	51.945	0.005	0.009%
typos	1.0	58.0	-8.15	-12.320%	44.482	-11.178	-20.082%	51.887	-0.053	-0.101%
spell_error	1.0	58.27	-7.88	-11.912%	45.627	-10.033	-18.025%	51.931	-0.009	-0.018%
random_char_insert	1.0	52.05	-14.1	-21.315%	33.948	-21.712	-39.008%	51.457	-0.483	-0.930%
random_char_replace	1.0	48.43	-17.72	-26.788%	29.488	-26.172	-47.021%	51.6	-0.34	-0.654%
random_char_swap	1.0	42.1	-24.05	-36.357%	24.694	-30.966	-55.634%	51.084	-0.856	-1.649%
random_char_delete	1.0	50.7	-15.45	-23.356%	33.543	-22.117	-39.736%	51.73	-0.21	-0.405%
random_word_insert	1.0	66.12	-0.03	-0.045%	51.026	-4.634	-8.326%	51.916	-0.024	-0.046%
random_word_delete	1.0	65.99	-0.16	-0.242%	52.886	-2.774	-4.984%	51.974	0.034	0.065%
swap_syn_word_emb	1.0	55.5	-10.65	-16.100%	46.367	-9.293	-16.697%	51.959	0.019	0.037%
swap_syn_word_net	1.0	58.86	-7.29	-11.020%	46.303	-9.357	-16.811%	52.017	0.077	0.148%
random_word_swap	1.0	66.05	-0.1	-0.151%	53.148	-2.512	-4.512%	51.974	0.034	0.065%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	2.0	55.52	-10.63	-16.070%	36.739	-18.921	-33.994%	51.816	-0.124	-0.239%
punctuation	2.0	65.8	-0.35	-0.529%	52.266	-3.394	-6.098%	51.945	0.005	0.009%
typos	2.0	56.95	-9.2	-13.908%	39.808	-15.852	-28.481%	51.873	-0.067	-0.129%
spell_error	2.0	57.52	-8.63	-13.046%	42.193	-13.467	-24.196%	51.931	-0.009	-0.018%
random_char_insert	2.0	41.01	-25.14	-38.005%	23.199	-32.461	-58.320%	51.026	-0.914	-1.759%
random_char_replace	2.0	35.89	-30.26	-45.745%	18.914	-36.746	-66.019%	51.084	-0.856	-1.649%
random_char_swap	2.0	32.14	-34.01	-51.413%	17.236	-38.424	-69.033%	50.926	-1.014	-1.953%
random_char_delete	2.0	39.09	-27.06	-40.907%	22.905	-32.755	-58.848%	51.443	-0.497	-0.958%
random_word_insert	2.0	64.5	-1.65	-2.494%	46.391	-9.269	-16.654%	51.787	-0.153	-0.295%
random_word_delete	2.0	61.29	-4.86	-7.347%	46.748	-8.912	-16.011%	51.801	-0.139	-0.267%
swap_syn_word_emb	2.0	54.73	-11.42	-17.264%	42.113	-13.547	-24.338%	52.074	0.134	0.258%
swap_syn_word_net	2.0	58.27	-7.88	-11.912%	43.028	-12.632	-22.696%	52.447	0.507	0.977%
random_word_swap	2.0	64.61	-1.54	-2.328%	50.413	-5.247	-9.426%	51.873	-0.067	-0.129%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	3.0	50.2	-15.95	-24.112%	29.734	-25.926	-46.578%	51.758	-0.182	-0.350%
punctuation	3.0	65.93	-0.22	-0.333%	52.29	-3.37	-6.055%	52.017	0.077	0.148%
keyboard	3.0	49.68	-16.47	-24.898%	29.575	-26.085	-46.864%	51.629	-0.311	-0.599%
spell_error	3.0	53.07	-13.08	-19.773%	35.339	-20.321	-36.508%	52.045	0.105	0.203%
random_char_insert	3.0	33.16	-32.99	-49.872%	18.262	-37.398	-67.190%	50.624	-1.316	-2.533%
random_char_replace	3.0	29.7	-36.45	-55.102%	15.257	-40.403	-72.589%	50.452	-1.488	-2.865%
random_char_swap	3.0	27.97	-38.18	-57.717%	14.136	-41.524	-74.603%	50.495	-1.445	-2.782%
random_char_delete	3.0	32.99	-33.16	-50.128%	17.3	-38.36	-68.918%	51.184	-0.756	-1.455%
random_word_insert	3.0	64.18	-1.97	-2.978%	41.867	-13.793	-24.781%	51.916	-0.024	-0.046%
random_word_delete	3.0	58.46	-7.69	-11.625%	42.527	-13.133	-23.596%	51.744	-0.196	-0.377%
swap_syn_word_emb	3.0	50.68	-15.47	-23.386%	35.96	-19.7	-35.394%	51.744	-0.196	-0.377%
swap_syn_word_net	3.0	54.64	-11.51	-17.400%	38.003	-17.657	-31.723%	52.261	0.321	0.617%
random_word_swap	3.0	63.53	-2.76	-4.164%	49.801	-7.019	-12.353%	71.178	-2.882	-3.891%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	4.0	43.59	-22.56	-34.104%	23.97	-31.69	-56.934%	51.543	-0.397	-0.764%
punctuation	4.0	65.79	-0.36	-0.544%	52.218	-3.442	-6.184%	51.974	0.034	0.065%
keyboard	4.0	39.63	-26.52	-40.091%	23.048	-32.612	-58.591%	51.428	-0.512	-0.985%
spell_error	4.0	45.18	-20.97	-31.701%	29.035	-26.625	-47.835%	51.801	-0.139	-0.267%
random_char_insert	4.0	29.28	-36.87	-55.737%	15.217	-40.443	-72.661%	50.61	-1.33	-2.561%
random_char_replace	4.0	27.14	-39.01	-58.972%	11.83	-43.83	-78.746%	50.969	-0.971	-1.870%
random_char_swap	4.0	26.33	-39.82	-60.197%	12.896	-42.764	-76.832%	50.38	-1.56	-3.003%
random_char_delete	4.0	29.29	-36.86	-55.722%	14.08	-41.58	-74.703%	51.112	-0.828	-1.593%
random_word_insert	4.0	62.99	-3.16	-4.777%	39.116	-16.544	-29.723%	51.73	-0.21	-0.405%
random_word_delete	4.0	52.44	-13.71	-20.726%	36.095	-19.565	-35.151%	51.959	0.019	0.037%
swap_syn_word_emb	4.0	46.4	-19.75	-29.856%	33.368	-22.292	-40.051%	51.801	-0.139	-0.267%
swap_syn_word_net	4.0	51.54	-14.61	-22.086%	35.069	-20.591	-36.994%	51.988	0.048	0.092%
random_word_swap	4.0	63.41	-2.74	-4.142%	47.392	-8.268	-14.854%	51.73	-0.21	-0.405%



Table 54: Performance and decrease ratio of Multiple Adapters on CLIP-T5 against text corruptions given severity 5.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	5.0	40.21	-25.94	-39.214%	20.52	-35.14	-63.133%	51.414	-0.526	-1.013%
punctuation	5.0	65.68	-0.47	-0.711%	52.512	-3.148	-5.655%	51.988	0.048	0.092%
typos	5.0	30.16	-35.99	-54.407%	18.739	-36.921	-66.333%	50.94	-1.0	-1.925%
keyboard	5.0	26.89	-39.26	-59.350%	15.575	-40.085	-72.018%	51.199	-0.741	-1.428%
spell_error	5.0	38.47	-27.68	-41.844%	25.751	-29.909	-53.735%	51.658	-0.282	-0.543%
random_char_insert	5.0	26.97	-39.18	-59.229%	14.032	-41.628	-74.789%	50.294	-1.646	-3.169%
random_char_replace	5.0	25.94	-40.21	-60.786%	10.097	-45.563	-81.860%	50.682	-1.258	-2.422%
random_char_swap	5.0	26.0	-40.15	-60.695%	13.46	-42.2	-75.817%	50.495	-1.445	-2.782%
random_char_delete	5.0	26.92	-39.23	-59.305%	13.166	-42.494	-76.346%	51.127	-0.813	-1.566%
to_passive	5.0	63.94	-2.21	-3.341%	49.793	-5.867	-10.540%	51.931	-0.009	-0.018%
tense	5.0	65.6	-0.55	-0.831%	53.927	-1.733	-3.113%	51.873	-0.067	-0.129%
to_formal	5.0	65.77	-0.38	-0.574%	53.307	-2.353	-4.227%	51.959	0.019	0.037%
to_casual	5.0	63.87	-2.28	-3.447%	50.366	-5.294	-9.512%	52.017	0.077	0.148%
to_active	5.0	65.03	-1.12	-1.693%	52.457	-3.203	-5.755%	51.83	-0.11	-0.212%
double_denial	5.0	66.06	-0.09	-0.136%	54.174	-1.486	-2.670%	51.959	0.019	0.037%
insert_adv	5.0	62.02	-4.13	-6.243%	49.316	-6.344	-11.397%	52.189	0.249	0.479%
append_irr	5.0	63.63	-2.52	-3.810%	45.381	-10.279	-18.468%	51.844	-0.096	-0.184%
random_word_insert	5.0	61.21	-4.94	-7.468%	35.324	-20.336	-36.537%	51.744	-0.196	-0.377%
drop_nn	5.0	46.98	-19.17	-28.980%	30.879	-24.781	-44.522%	51.615	-0.325	-0.626%
drop_rand_one_nn	5.0	57.98	-8.17	-12.351%	43.393	-12.267	-22.039%	51.887	-0.053	-0.101%
drop_vb	5.0	58.97	-7.18	-10.854%	33.893	-21.767	-39.108%	51.988	0.048	0.092%
drop_vb_nn	5.0	47.81	-18.34	-27.725%	21.379	-34.281	-61.591%	51.443	-0.497	-0.958%
only_nn	5.0	32.59	-33.56	-50.733%	9.199	-46.461	-83.474%	51.141	-0.799	-1.538%
only_vb	5.0	53.28	-12.87	-19.456%	39.816	-15.844	-28.466%	51.873	-0.067	-0.129%
only_vb_nn	5.0	43.48	-22.67	-34.271%	24.853	-30.807	-55.349%	51.328	-0.612	-1.179%
drop_rand_one_vb	5.0	62.94	-3.21	-4.853%	42.543	-13.117	-23.567%	51.959	0.019	0.037%
drop_first	5.0	60.92	-5.23	-7.906%	35.721	-19.939	-35.823%	51.931	-0.009	-0.018%
drop_last	5.0	53.82	-12.33	-18.639%	45.754	-9.906	-17.796%	51.873	-0.067	-0.129%
drop_first_and_last	5.0	47.88	-18.27	-27.619%	28.049	-27.611	-49.607%	51.701	-0.239	-0.460%
shuffle_order	5.0	59.47	-6.68	-10.098%	38.504	-17.156	-30.823%	51.83	-0.11	-0.212%
random_word_delete	5.0	46.73	-19.42	-29.358%	29.13	-26.53	-47.664%	51.902	-0.038	-0.074%
swap_syn_word_emb	5.0	45.91	-20.24	-30.597%	32.676	-22.984	-41.293%	51.701	-0.239	-0.460%
swap_syn_word_net	5.0	46.74	-19.41	-29.342%	33.996	-21.664	-38.922%	51.931	-0.009	-0.018%
back_trans	5.0	62.86	-3.29	-4.974%	50.445	-5.215	-9.369%	51.887	-0.053	-0.101%
random_word_swap	5.0	62.52	-3.63	-5.488%	46.16	-9.5	-17.068%	51.859	-0.081	-0.156%
nonsense	5.0	13.3	-52.85	-79.894%	11.671	-43.989	-79.031%	51.887	-0.053	-0.101%

Table 55: Performance and decrease ratio of Multiple Compacters on CLIP-T5 against text corruptions given severity 1 to 4.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	1.0	56.09	-9.41	-14.366%	44.069	-10.611	-19.406%	52.835	0.205	0.389%
punctuation	1.0	65.02	-0.48	-0.733%	52.671	-2.009	-3.673%	52.763	0.133	0.253%
typos	1.0	58.04	-7.46	-11.389%	45.103	-9.577	-17.515%	52.591	-0.039	-0.075%
keyboard	1.0	56.15	-9.35	-14.275%	44.125	-10.555	-19.304%	52.749	0.119	0.225%
spell_error	1.0	58.07	-7.43	-11.344%	46.581	-8.099	-14.811%	52.634	0.004	0.007%
random_char_insert	1.0	52.37	-13.13	-20.046%	35.92	-18.76	-34.309%	52.95	0.32	0.607%
random_char_replace	1.0	48.48	-17.02	-25.985%	32.199	-22.481	-41.114%	52.634	0.004	0.007%
random_char_swap	1.0	41.69	-23.81	-36.351%	26.976	-27.704	-50.666%	52.921	0.291	0.553%
random_char_delete	1.0	50.45	-15.05	-22.977%	35.681	-18.999	-34.745%	52.806	0.176	0.335%
random_word_insert	1.0	65.51	0.01	0.015%	51.089	-3.591	-6.567%	52.634	0.004	0.007%
random_word_delete	1.0	65.42	-0.08	-0.122%	52.679	-2.001	-3.659%	52.505	-0.125	-0.238%
swap_syn_word_emb	1.0	55.32	-10.18	-15.542%	46.184	-8.496	-15.538%	52.691	0.061	0.116%
swap_syn_word_net	1.0	58.51	-6.99	-10.672%	46.963	-7.717	-14.113%	52.835	0.205	0.389%
random_word_swap	1.0	65.49	-0.01	-0.015%	52.759	-1.921	-3.514%	52.576	-0.054	-0.102%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	2.0	55.24	-10.26	-15.664%	40.11	-14.57	-26.646%	52.462	-0.168	-0.320%
punctuation	2.0	65.13	-0.37	-0.565%	52.703	-1.977	-3.615%	52.505	-0.125	-0.238%
typos	2.0	56.76	-8.74	-13.344%	40.945	-13.735	-25.120%	52.576	-0.054	-0.102%
keyboard	2.0	55.84	-9.66	-14.748%	38.949	-15.731	-28.769%	52.447	-0.183	-0.347%
spell_error	2.0	57.51	-7.99	-12.198%	43.353	-11.327	-20.714%	52.72	0.09	0.171%
random_char_insert	2.0	41.9	-23.6	-36.031%	26.483	-28.197	-51.568%	52.806	0.176	0.335%
random_char_replace	2.0	36.5	-29.0	-44.275%	23.048	-31.632	-57.849%	52.806	0.176	0.335%
random_char_swap	2.0	32.15	-33.35	-50.916%	20.862	-33.818	-61.847%	52.863	0.233	0.444%
random_char_delete	2.0	39.44	-26.06	-39.786%	26.332	-28.348	-51.844%	52.447	-0.183	-0.347%
random_word_insert	2.0	64.02	-1.48	-2.260%	47.957	-6.723	-12.296%	52.591	-0.039	-0.075%
random_word_delete	2.0	60.66	-4.84	-7.389%	46.78	-7.9	-14.448%	52.619	-0.011	-0.020%
swap_syn_word_emb	2.0	54.6	-10.9	-16.641%	42.638	-12.042	-22.023%	52.634	0.004	0.007%
swap_syn_word_net	2.0	58.0	-7.5	-11.450%	44.101	-10.579	-19.347%	52.763	0.133	0.253%
random_word_swap	2.0	63.9	-1.6	-2.443%	50.326	-4.354	-7.963%	52.691	0.061	0.116%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	3.0	50.66	-14.84	-22.656%	33.241	-21.439	-39.209%	52.863	0.233	0.444%
punctuation	3.0	65.1	-0.4	-0.611%	52.576	-2.104	-3.848%	52.663	0.033	0.062%
typos	3.0	52.35	-13.15	-20.076%	34.425	-20.255	-37.042%	52.734	0.104	0.198%
keyboard	3.0	49.94	-15.56	-23.756%	32.39	-22.29	-40.765%	52.562	-0.068	-0.129%
spell_error	3.0	52.94	-12.56	-19.176%	36.58	-18.1	-33.102%	52.39	-0.24	-0.456%
random_char_insert	3.0	34.36	-31.14	-47.542%	21.943	-32.737	-59.870%	52.964	0.334	0.635%
random_char_replace	3.0	30.41	-35.09	-53.573%	20.019	-34.661	-63.389%	52.648	0.018	0.035%
random_char_swap	3.0	28.04	-37.46	-57.191%	18.819	-35.861	-65.584%	52.691	0.061	0.116%
random_char_delete	3.0	33.37	-32.13	-49.053%	21.744	-32.936	-60.234%	52.347	-0.283	-0.538%
random_word_insert	3.0	62.96	-2.54	-3.878%	43.059	-11.621	-21.252%	52.878	0.248	0.471%
random_word_delete	3.0	57.83	-7.67	-11.710%	42.892	-11.788	-21.558%	52.591	-0.039	-0.075%
swap_syn_word_emb	3.0	50.75	-14.75	-22.519%	36.993	-17.687	-32.346%	52.691	0.061	0.116%
swap_syn_word_net	3.0	54.67	-10.83	-16.534%	39.235	-15.445	-28.246%	52.663	0.033	0.062%
random_word_swap	3.0	63.04	-2.46	-3.756%	48.227	-6.453	-11.801%	52.576	-0.054	-0.102%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	4.0	44.0	-21.5	-32.824%	28.224	-26.456	-48.384%	52.964	0.334	0.635%
punctuation	4.0	65.04	-0.46	-0.702%	52.512	-2.168	-3.964%	52.663	0.033	0.062%
keyboard	4.0	40.22	-25.28	-38.595%	25.409	-29.271	-53.531%	52.691	0.061	0.116%
spell_error	4.0	45.31	-20.19	-30.824%	31.03	-23.65	-43.251%	52.548	-0.082	-0.156%
random_char_insert	4.0	29.9	-35.6	-54.351%	20.067	-34.613	-63.301%	52.49	-0.14	-0.265%
random_char_replace	4.0	27.68	-37.82	-57.740%	18.445	-36.235	-66.268%	52.605	-0.025	-0.047%
random_char_swap	4.0	26.24	-39.26	-59.939%	18.246	-36.434	-66.631%	52.562	-0.068	-0.129%
random_char_delete	4.0	29.73	-35.77	-54.611%	18.954	-35.726	-65.337%	52.892	0.262	0.498%
random_word_insert	4.0	61.52	-3.98	-6.076%	39.696	-14.984	-27.403%	52.72	0.09	0.171%
random_word_delete	4.0	51.76	-13.74	-20.977%	36.818	-17.862	-32.666%	52.835	0.205	0.389%
swap_syn_word_emb	4.0	46.65	-18.85	-28.779%	33.916	-20.764	-37.973%	52.634	0.004	0.007%
swap_syn_word_net	4.0	51.37	-14.13	-21.573%	36.953	-17.727	-32.419%	52.878	0.248	0.471%
random_word_swap	4.0	62.28	-3.22	-4.916%	47.48	-7.2	-13.168%	52.663	0.033	0.062%

Table 56: Performance and decrease ratio of Multiple Compacters on CLIP-T5 against text corruptions given severity 5.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	5.0	41.0	-24.5	-37.405%	25.648	-29.032	-53.094%	52.691	0.061	0.116%
punctuation	5.0	65.07	-0.43	-0.656%	52.449	-2.231	-4.081%	52.605	-0.025	-0.047%
typos	5.0	30.91	-34.59	-52.809%	20.472	-34.208	-62.560%	52.749	0.119	0.225%
keyboard	5.0	26.77	-38.73	-59.130%	18.501	-36.179	-66.166%	52.619	-0.011	-0.020%
spell_error	5.0	38.84	-26.66	-40.702%	27.5	-27.18	-49.707%	52.576	-0.054	-0.102%
random_char_insert	5.0	27.82	-37.68	-57.527%	18.978	-35.702	-65.293%	52.792	0.162	0.307%
random_char_replace	5.0	26.28	-39.22	-59.878%	17.825	-36.855	-67.402%	52.677	0.047	0.089%
random_char_swap	5.0	25.39	-40.11	-61.237%	19.025	-35.655	-65.206%	52.619	-0.011	-0.020%
random_char_delete	5.0	27.45	-38.05	-58.092%	18.127	-36.553	-66.849%	52.734	0.104	0.198%
to_passive	5.0	63.2	-2.3	-3.511%	50.533	-4.147	-7.585%	52.892	0.262	0.498%
tense	5.0	64.88	-0.62	-0.947%	53.299	-1.381	-2.525%	52.72	0.09	0.171%
to_formal	5.0	65.13	-0.37	-0.565%	53.029	-1.651	-3.019%	52.663	0.033	0.062%
to_casual	5.0	63.47	-2.03	-3.099%	50.628	-4.052	-7.410%	52.591	-0.039	-0.075%
to_active	5.0	64.3	-1.2	-1.832%	52.52	-2.16	-3.950%	52.706	0.076	0.144%
double_denial	5.0	65.38	-0.12	-0.183%	53.689	-0.991	-1.812%	52.605	-0.025	-0.047%
insert_adv	5.0	61.87	-3.63	-5.542%	48.815	-5.865	-10.725%	52.691	0.061	0.116%
append_irr	5.0	63.24	-2.26	-3.450%	46.247	-8.433	-15.422%	52.749	0.119	0.225%
random_word_insert	5.0	59.47	-6.03	-9.206%	36.19	-18.49	-33.815%	52.749	0.119	0.225%
drop_nn	5.0	44.59	-20.91	-31.924%	31.476	-23.204	-42.437%	52.691	0.061	0.116%
drop_rand_one_nn	5.0	57.16	-8.34	-12.733%	44.785	-9.895	-18.097%	52.447	-0.183	-0.347%
drop_vb	5.0	58.28	-7.22	-11.023%	39.911	-14.769	-27.010%	52.404	-0.226	-0.429%
drop_vb_nn	5.0	44.28	-21.22	-32.397%	26.117	-28.563	-52.237%	52.691	0.061	0.116%
only_nn	5.0	28.05	-37.45	-57.176%	18.373	-36.307	-66.398%	52.375	-0.255	-0.484%
only_vb	5.0	52.25	-13.25	-20.229%	39.172	-15.508	-28.362%	52.232	-0.398	-0.756%
only_vb_nn	5.0	42.0	-23.5	-35.878%	29.09	-25.59	-46.799%	52.332	-0.298	-0.565%
drop_rand_one_vb	5.0	62.42	-3.08	-4.702%	45.929	-8.751	-16.003%	52.519	-0.111	-0.211%
drop_first	5.0	59.21	-6.29	-9.603%	40.483	-14.197	-25.963%	52.548	-0.082	-0.156%
drop_last	5.0	53.91	-11.59	-17.695%	46.724	-7.956	-14.549%	52.505	-0.125	-0.238%
drop_first_and_last	5.0	46.85	-18.65	-28.473%	33.535	-21.145	-38.671%	52.835	0.205	0.389%
shuffle_order	5.0	57.27	-8.23	-12.565%	39.959	-14.721	-26.923%	52.576	-0.054	-0.102%
random_word_delete	5.0	46.13	-19.37	-29.573%	30.951	-23.729	-43.396%	52.677	0.047	0.089%
swap_syn_word_emb	5.0	46.29	-19.21	-29.328%	32.716	-21.964	-40.169%	52.648	0.018	0.035%
swap_syn_word_net	5.0	48.37	-17.13	-26.153%	35.88	-18.8	-34.382%	52.591	-0.039	-0.075%
back_trans	5.0	62.16	-3.34	-5.099%	50.262	-4.418	-8.079%	52.648	0.018	0.035%
random_word_swap	5.0	61.58	-3.92	-5.985%	46.096	-8.584	-15.698%	52.648	0.018	0.035%
nonsense	5.0	22.31	-43.19	-65.939%	9.103	-45.577	-83.352%	52.663	0.033	0.062%

Table 57: Performance and decrease ratio of Single Adapter on CLIP-T5 against text corruptions given severity 1 to 4.

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	1.0	56.11	-10.3	-15.510%	40.539	-15.361	-27.479%	58.892	-13.888	-19.082%
punctuation	1.0	65.58	-0.83	-1.250%	48.998	-6.902	-12.347%	72.686	-0.094	-0.130%
typos	1.0	58.35	-8.06	-12.137%	42.399	-13.501	-24.151%	69.829	-2.951	-4.054%
keyboard	1.0	56.45	-9.96	-14.998%	41.0	-14.9	-26.654%	69.7	-3.08	-4.232%
spell_error	1.0	58.46	-7.95	-11.971%	43.274	-12.626	-22.587%	69.47	-3.31	-4.547%
random_char_insert	1.0	52.25	-14.16	-21.322%	34.179	-21.721	-38.857%	64.49	-8.29	-11.391%
random_char_replace	1.0	48.57	-17.84	-26.863%	32.199	-23.701	-42.399%	62.566	-10.214	-14.034%
random_char_swap	1.0	42.15	-24.26	-36.531%	27.477	-28.423	-50.847%	58.16	-14.62	-20.088%
random_char_delete	1.0	51.55	-14.86	-22.376%	34.123	-21.777	-38.957%	62.868	-9.912	-13.619%
random_word_insert	1.0	66.19	-0.22	-0.331%	47.329	-8.571	-15.333%	72.083	-0.697	-0.958%
random_word_delete	1.0	66.26	-0.15	-0.226%	48.72	-7.18	-12.844%	71.738	-1.042	-1.431%
swap_syn_word_emb	1.0	56.0	-10.41	-15.675%	42.487	-13.413	-23.995%	66.528	-6.252	-8.590%
swap_syn_word_net	1.0	59.38	-7.03	-10.586%	44.292	-11.608	-20.766%	70.403	-2.377	-3.266%
random_word_swap	1.0	66.33	-0.08	-0.120%	48.672	-7.228	-12.930%	72.083	-0.697	-0.958%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	2.0	55.18	-11.23	-16.910%	36.826	-19.074	-34.121%	66.37	-6.41	-8.807%
punctuation	2.0	65.91	-0.5	-0.753%	48.847	-7.053	-12.617%	72.7	-0.08	-0.110%
typos	2.0	57.18	-9.23	-13.899%	38.536	-17.364	-31.063%	66.715	-6.065	-8.334%
keyboard	2.0	55.54	-10.87	-16.368%	36.771	-19.129	-34.221%	65.939	-6.841	-9.399%
spell_error	2.0	57.9	-8.51	-12.814%	40.261	-15.639	-27.977%	66.801	-5.979	-8.216%
random_char_insert	2.0	41.71	-24.7	-37.193%	26.491	-29.409	-52.611%	59.222	-13.558	-18.629%
random_char_replace	2.0	36.75	-29.66	-44.662%	24.288	-31.612	-56.550%	56.265	-16.515	-22.691%
random_char_swap	2.0	32.67	-33.74	-50.806%	21.458	-34.442	-61.613%	53.036	-19.744	-27.129%
random_char_delete	2.0	40.07	-26.34	-39.663%	26.268	-29.632	-53.009%	56.466	-16.314	-22.415%
random_word_insert	2.0	64.71	-1.7	-2.560%	44.49	-11.41	-20.411%	70.877	-1.903	-2.615%
random_word_delete	2.0	61.02	-5.39	-8.116%	43.719	-12.181	-21.790%	69.327	-3.453	-4.745%
swap_syn_word_emb	2.0	55.17	-11.24	-16.925%	39.108	-16.792	-30.039%	61.389	-11.391	-15.651%
swap_syn_word_net	2.0	58.73	-7.68	-11.565%	42.336	-13.564	-24.265%	67.246	-5.534	-7.604%
random_word_swap	2.0	64.78	-1.63	-2.454%	46.613	-9.287	-16.613%	71.25	-1.53	-2.102%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	3.0	50.43	-15.98	-24.063%	30.712	-25.188	-45.058%	62.739	-10.041	-13.797%
punctuation	3.0	65.87	-0.54	-0.813%	48.712	-7.188	-12.859%	72.585	-0.195	-0.268%
typos	3.0	51.92	-14.49	-21.819%	32.851	-23.049	-41.233%	63.772	-9.008	-12.377%
keyboard	3.0	49.64	-16.77	-25.252%	31.078	-24.822	-44.404%	61.964	-10.816	-14.862%
spell_error	3.0	53.28	-13.13	-19.771%	34.036	-21.864	-39.113%	62.954	-9.826	-13.501%
random_char_insert	3.0	34.49	-31.92	-48.065%	22.73	-33.17	-59.338%	54.241	-18.539	-25.472%
random_char_replace	3.0	31.23	-35.18	-52.974%	21.1	-34.8	-62.253%	52.476	-20.304	-27.898%
random_char_swap	3.0	28.53	-37.88	-57.040%	19.558	-36.342	-65.013%	50.926	-21.854	-30.028%
random_char_delete	3.0	34.21	-32.2	-48.487%	22.667	-33.233	-59.452%	53.552	-19.228	-26.419%
random_word_insert	3.0	62.86	-3.55	-5.346%	40.547	-15.353	-27.465%	71.121	-1.659	-2.279%
random_word_delete	3.0	58.6	-7.81	-11.760%	40.444	-15.456	-27.650%	67.131	-5.649	-7.762%
swap_syn_word_emb	3.0	51.04	-15.37	-23.144%	33.893	-22.007	-39.369%	58.361	-14.419	-19.812%
swap_syn_word_net	3.0	55.32	-11.09	-16.699%	38.289	-17.611	-31.504%	63.686	-9.094	-12.495%
random_word_swap	3.0	64.14	-2.27	-3.418%	44.888	-11.012	-19.700%	69.556	-3.224	-4.429%

corruption	severity	VQA			GQA			NLVR		
		Acc	Decrease	Decrease Ratio	Acc	Decrease	Decrease Ratio	CIDer	Decrease	Decrease Ratio
ocr	4.0	43.45	-22.96	-34.573%	26.777	-29.123	-52.099%	58.734	-14.046	-19.299%
punctuation	4.0	65.73	-0.68	-1.024%	48.648	-7.252	-12.972%	72.485	-0.295	-0.406%
typos	4.0	43.92	-22.49	-33.865%	27.262	-28.638	-51.231%	59.854	-12.926	-17.761%
keyboard	4.0	39.88	-26.53	-39.949%	25.25	-30.65	-54.829%	57.959	-14.821	-20.364%
spell_error	4.0	45.13	-21.28	-32.043%	29.695	-26.205	-46.879%	59.94	-12.84	-17.643%
random_char_insert	4.0	30.58	-35.83	-53.953%	20.806	-35.094	-62.780%	52.72	-20.06	-27.563%
random_char_replace	4.0	27.97	-38.44	-57.883%	19.661	-36.239	-64.828%	51.27	-21.51	-29.554%
random_char_swap	4.0	26.83	-39.58	-59.599%	18.437	-37.463	-67.018%	50.94	-21.84	-30.008%
random_char_delete	4.0	29.97	-36.44	-54.871%	20.544	-35.356	-63.249%	52.993	-19.787	-27.188%
random_word_insert	4.0	60.6	-5.81	-8.749%	38.138	-17.762	-31.775%	69.7	-3.08	-4.232%
random_word_delete	4.0	52.07	-14.34	-21.593%	35.196	-20.704	-37.037%	64.935	-7.845	-10.779%
swap_syn_word_emb	4.0	47.34	-19.07	-28.716%	30.855	-25.045	-44.802%	56.911	-15.869	-21.804%
swap_syn_word_net	4.0	51.87	-14.54	-21.894%	35.92	-19.98	-35.743%	59.839	-12.941	-17.781%
random_word_swap	4.0	62.94	-3.47	-5.225%	43.632	-12.268	-21.947%	68.997	-3.783	-5.198%

## 224 References

- 225 [1] Tom Brown, Benjamin Mann, Nick Ryder, Melanie Subbiah, Jared D Kaplan, Prafulla Dhariwal, Arvind  
226 Neelakantan, Pranav Shyam, Girish Sastry, Amanda Askell, et al. Language models are few-shot learners.  
227 *Advances in neural information processing systems*, 33:1877–1901, 2020.
- 228 [2] Madeline Chantry, Shruti Vyas, Hamid Palangi, Yogesh Rawat, and Vibhav Vineet. Robustness analysis  
229 of video-language models against visual and language perturbations. *Advances in Neural Information*  
230 *Processing Systems*, 35:34405–34420, 2022.
- 231 [3] Xinlei Chen, Hao Fang, Tsung-Yi Lin, Ramakrishna Vedantam, Saurabh Gupta, Piotr Dollár, and  
232 C Lawrence Zitnick. Microsoft coco captions: Data collection and evaluation server. *arXiv preprint*  
233 *arXiv:1504.00325*, 2015.
- 234 [4] Jaemin Cho, Jie Lei, Hao Tan, and Mohit Bansal. Unifying vision-and-language tasks via text generation.  
235 In *International Conference on Machine Learning*, pages 1931–1942. PMLR, 2021.
- 236 [5] Yash Goyal, Tejas Khot, Douglas Summers-Stay, Dhruv Batra, and Devi Parikh. Making the v in vqa  
237 matter: Elevating the role of image understanding in visual question answering. In *Proceedings of the*  
238 *IEEE conference on computer vision and pattern recognition*, pages 6904–6913, 2017.
- 239 [6] Dan Hendrycks and Thomas Dietterich. Benchmarking neural network robustness to common corruptions  
240 and perturbations. *arXiv preprint arXiv:1903.12261*, 2019.
- 241 [7] Dan Hendrycks and Kevin Gimpel. Bridging nonlinearities and stochastic regularizers with gaussian error  
242 linear units. *CoRR*, abs/1606.08415, 3, 2016.
- 243 [8] Neil Houlsby, Andrei Giurgiu, Stanislaw Jastrzebski, Bruna Morrone, Quentin De Laroussilhe, Andrea Ges-  
244 mundo, Mona Attariyan, and Sylvain Gelly. Parameter-efficient transfer learning for nlp. In *International*  
245 *Conference on Machine Learning*, pages 2790–2799. PMLR, 2019.
- 246 [9] Edward J Hu, Yelong Shen, Phillip Wallis, Zeyuan Allen-Zhu, Yuanzhi Li, Shean Wang, Lu Wang, and  
247 Weizhu Chen. Lora: Low-rank adaptation of large language models. *arXiv preprint arXiv:2106.09685*,  
248 2021.
- 249 [10] Drew A Hudson and Christopher D Manning. Gqa: A new dataset for real-world visual reasoning and  
250 compositional question answering. In *Proceedings of the IEEE/CVF conference on computer vision and*  
251 *pattern recognition*, pages 6700–6709, 2019.
- 252 [11] Rabeeh Karimi Mahabadi, James Henderson, and Sebastian Ruder. Compacter: Efficient low-rank  
253 hypercomplex adapter layers. *Advances in Neural Information Processing Systems*, 34:1022–1035, 2021.
- 254 [12] Brian Lester, Rami Al-Rfou, and Noah Constant. The power of scale for parameter-efficient prompt tuning.  
255 *arXiv preprint arXiv:2104.08691*, 2021.
- 256 [13] Rabeeh Karimi Mahabadi, Sebastian Ruder, Mostafa Dehghani, and James Henderson. Parameter-efficient  
257 multi-task fine-tuning for transformers via shared hypernetworks. *arXiv preprint arXiv:2106.04489*, 2021.
- 258 [14] George A Miller. Wordnet: a lexical database for english. *Communications of the ACM*, 38(11):39–41,  
259 1995.
- 260 [15] Jieli Qiu, Yi Zhu, Xingjian Shi, Florian Wenzel, Zhiqiang Tang, Ding Zhao, Bo Li, and Mu Li. Are  
261 multimodal models robust to image and text perturbations? *arXiv preprint arXiv:2212.08044*, 2022.
- 262 [16] Alane Suhr, Stephanie Zhou, Ally Zhang, Iris Zhang, Huajun Bai, and Yoav Artzi. A corpus for reasoning  
263 about natural language grounded in photographs. *arXiv preprint arXiv:1811.00491*, 2018.
- 264 [17] Yi-Lin Sung, Jaemin Cho, and Mohit Bansal. Vi-adapter: Parameter-efficient transfer learning for vision-  
265 and-language tasks. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern*  
266 *Recognition*, pages 5227–5237, 2022.
- 267 [18] Ramakrishna Vedantam, C Lawrence Zitnick, and Devi Parikh. Cider: Consensus-based image description  
268 evaluation. In *Proceedings of the IEEE conference on computer vision and pattern recognition*, pages  
269 4566–4575, 2015.
- 270 [19] Xiao Wang, Qin Liu, Tao Gui, Qi Zhang, et al. Textflint: Unified multilingual robustness evaluation  
271 toolkit for natural language processing. In *Proceedings of the 59th Annual Meeting of the Association for*  
272 *Computational Linguistics and the 11th International Joint Conference on Natural Language Processing:*  
273 *System Demonstrations*, pages 347–355, Online, aug 2021. Association for Computational Linguistics.