

Kyle Roth

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EDUCATION

Université de Montréal

Ph.D., Computer Science; advised by Dr. Bang Liu

- Research on structured use of LLMs within larger pipelines and agent systems, both from robustness and sociotechnical perspectives
- **3.7 GPA**; accelerated admission in fall 2022 from M.Sc. (**4.3 GPA**)
- Run advanced machine learning projects class every winter

Montréal, QC

Sep 2021 - May 2026

Brigham Young University

B.S., Mathematics; Applied and Computational Mathematics Emphasis

- Cum Laude (**3.9 GPA**); minor in computer science; concentration in linguistics
- **Grant-funded research**: achieved 71% accuracy on a Basque morphology corpus with a recent VoCRF implementation
- **Senior project**: scored 76% accuracy on phoneme classification of the TIMIT corpus

Provo, UT

Aug 2014 - Dec 2019

WORK EXPERIENCE

Cobalt Speech and Language

speech scientist (full time)

- Built an online training service in Go to manage parallel training of Kaldi models on sensitive live data
- Implemented state-of-the-art hyperparameter selection algorithms (learning rate range test; adaptive filtering) for online training
- Implemented MFCC extraction in Go while avoiding allocs and array bound checks

(remote) Provo, UT

Jan 2020 - Aug 2021

CamachoLab, Brigham Young University

research assistant (part time)

- Simulated field profiles of photonic chip components in TensorFlow using neural networks with resize convolutions
- Built SLURM_gen, a tool to automatically generate and manage simulated datasets in a high-performance computing environment
- Wrote custom resize-convolution layer to improve performance

Provo, UT

Jan 2019 - Dec 2019

Emergent Trading

software developer (intern)

- Wrote fast market analysis code in C++ to track competitors on currency markets at the Chicago Mercantile Exchange
- Created an interactive tool to observe currency market behavior using Bokeh

Chicago, IL

May 2019 - Aug 2019

Cobalt Speech and Language

speech scientist (intern)

- Improved model accuracy from 76% to 94% for autonomous drone recognition of air traffic control speech, using class-based (Thrax) language models

(remote) Provo, UT

Apr 2018 - Nov 2018

SKILLS

- **languages**: Python, Go, C++, Java, Dart, Bash, \LaTeX
- **tools**: PyTorch, LangChain, Weaviate, SLURM, Git, Docker, Flutter, scikit-learn, TensorFlow, AWS, SQL
- **natural languages**: native English, fluent Spanish, functional French