Fawaz Mujtaba

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Skills and Education

Degree: B.S. in Computer Science and Math at the University of Nevada Las Vegas; Honors College, 3.75 GPA

Languages: Java, C, C++, JavaScript, Python, HTML, C#, CSS, Flutter, RISC/MIPS Assembly, Kotlin

Tools and Libraries:: MySQL, MongoDB, REST APIs, React, Node.JS, Neural Networks, Machine Learning, TensorFlow and Keras, ROS/ROS2, LWJGL, OpenGL, GitHub, Jira, IBM Qiskit, ExpressJS, AWS Cloud, VR, Windows, Linux, Mac, Deep Learning, Pytorch, Selenium, Pandas, Numpy, Data Structures, Algorithms, First Principles

Experience

Blue Origin (June 2021 - Present)

- Supported operations for New Shepard Crew Capsule missions, requiring comprehensive knowledge of avionics systems including flight computers, communication systems, and all safety-critical applications.
- Developed safety critical C++ applications for RTOS computers to process and convert byte data into scientific/engineering units with strict timing requirements. Enhanced unit and system integration testing for Hardware In the Loop(HIL) systems to verify safety of new software.
- Utilized DXL scripting to automate creation and reporting of system, component, and hardware requirements in DOORS, significantly improving ability to create traceability reports proving out safety of vehicle systems. This led to my development of numerous python tools for analysis and testing of new flight hardware. This includes directly measuring hardware capabilities, generating logs, automated graphing, data verification, and more.

Qualcomm Software Engineering Internship (May - August 2021)

- Developed an internal website in HTML/CSS/Javascript for programming file compilation, testing, comparisons, and overall data management with an Express Node.JS server and built and connected to RESTful APIs to connect and control a Github repository and how files would be saved and branched within it.
- Authored scripts for parsing through real-time data packets along with generating Quicksight dashboards to display metrics for analysis. Debugged many of the past functions necessary to process these scripts.

Intellimind Full Stack Dev (May 2020 - April 2021)

- Designed React applications and HTML/JavaScript/CSS Serverless websites using RESTful APIs, S3, and numerous other AWS cloud services linked with SQL databases for backend user and data management
- Developed Dashboards for visualization of daily stock market, Twitter, and shipping data with insights into sentiment, trends, and various other metrics utilizing Pandas and Numpy
- Created Python web crawlers on EC2 Servers capable of logging in, traversing, and downloading files from numerous different websites, and reporting results to SQL DBs, and shown in websites to the end-user

NASA(JPL) Intern (Jun - Aug 2019)

- Upgraded ROS programs to ROS2 along with creating extensive documentation to assist the team in the transition. within a Linux environment using C++.
- Converted 2D lidar point cloud maps into 3D simulation environments to be utilized for drone and rover testing using C++

Projects

ML Model Builder Tool

- Developed a framework that takes in a YAML file with a description of a Neural Network architecture and training parameters to automatically construct and train various types of ML models. This significantly reduces the time needed to experiment with various architectures and ideas.

Valorant Gun Controller

- Constructed a game controller using a Raspberry Pi, Arduino, and old smartphones, capable of translating movement and aiming into PC game inputs. Converted phone orientation and accelerometer data into mouse movements, with a separate phone camera detecting actions for jumping and crouching via a custom CNN ML model.
- Utilized a Node.js and Python Flask server combo, with Bluetooth modules to facilitate real-time communication between devices for a fast response rate, using APIs for device interaction.

Music AI Generator

- Used generated spectrogram images to train a GANs Neural Network w/ Pytorch to generate new spectrograms which could be converted back into Audio files to listen to.
- Built a set of automated scripts to generate a dataset with a collection of audio files, sliced into 5-second segments, and converted to spectrographs that would be used to train the network