Michael Maggiore

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EDUCATION

Colorado School of Mines | Computer Science + Robotics and Intelligent Systems B.S. Exp: May 2024 | GPA: 3.92
Honors: Verizon C-MAPP Scholar, MURF Scholar, Dean's List
Coursework: Data Structures & Algorithms, Computer Organization, Database Management, Introduction to the Linux Operating System, Introduction to Data Science, Foundational Programming Concepts and Design
Languages: Python, JavaScript, C++, SQL, HTML
Tools/Frameworks: Pandas, Git, Tensorflow, Scikit-Learn, Jupyter Notebook, AWS, SageMaker, Data Visualization

WORK EXPERIENCE

Mines Undergraduate Research Fellow at Colorado School of Mines *Part-time | May 2022 - Present*

- Implemented machine learning and neural network techniques to IoT traffic data to investigate different network models that can run locally on the IoT device, securing users' privacy and safeguarding data from being leaked on a remote server.
- Simulated top commercially available cameras by deploying object detection models on a Raspberry Pi using **Tensorflow** and **Python**.
- Compared performance of on-device object detection with on-server object detection through leveraging **AWS**.

IMCS Webmaster at Colorado School of Mines *Part-time | Sept 2022 - Present*

- Designed and maintained website, adding new aesthetic features across web pages using **HTML** and **CSS**.

Technology Intern at Poly *Internship | June 2022 - Aug 2022*

- Worked **front-end** to implement a UI on the company's product app, where numerous designated endpoints can instantly connect to a video conferencing room from the control of one host, speeding up business meeting times by 15 minutes. Leveraged **Python's Tkinter** library to create the app's entire layout and functionalities.
- Assisted in performance optimization of the company's video devices by performing cross-platform analysis of the video and sound quality from various competitors' equipment using **Pandas** and **Matplotlib**.
- Improved efficiency in testing the hardware and software of competitor's equipment by implementing a hashing algorithm to generate unique hidden tests using **Python**, saving over 20 hours of testing time.

PROJECTS

Stock Price Predictor

- Designed a machine learning model in **Python** to predict the next adjusted closed price of a stock by fitting a support vector regression algorithm to a stock dataset using support vector machines.
- Utilized **Pandas**, **Matplotlib**, and **Scikit-Learn** to train and test the SVR model on the pre-given Kaggle dataset, evaluating the stock price history of companies like GOOG and AMZN over a 20-year period.
- Applied cross-validation to evaluate which kernel (polynomial, linear, or radial basis function) would be the best to use for prediction. RBF would be best as it had a mean score of 0.784, making it the closest kernel value to 1.

Hot-Swap Keyboard

- Fabricated an assistive mechanical keyboard for the elderly. It is a ready-to-market device with unique features such as custom programmable keycaps, 1.3x increased button size, and hot-swap capabilities.
- Enabled the keycaps to be swappable and correctly assigned to their user-specific program. Coded an **Arduino** in **C++** to allow the microcontroller to identify and read the specific voltage level of a pressed keycap.
- Awarded **First** overall out of 120 teams at the Spring 2022 Cornerstone Design@Mines Competition.

Portfolio Website

- Designed my personal website to be interactive and responsive using **HTML**, **CSS**, and **JavaScript**.