McKale Chung

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SKILLS

C++, Python, Machine Learning, Computer Vision, UX, ReactJS, Microsoft Office (Excel, Powerpoint)

WORK EXPERIENCE

Outreach Ambassador   January 2019 - Present
Stem Fellowship
- Develop marketing campaigns and articles to spread STEM news and organizations
- Co-lead in a webinar designed to teach students how to conduct a scientific research project, resulting in students directing their own personal projects.

Vice President of Information Technologies   September 2021 - May 2022
Hold the Phone, of Junior Achievement Southern Alberta
- Develop the company website in ReactJS using modern UX techniques
- Orchestrate training for digital design, digital literacy, and communication, in Excel and Canva
- Organize product documentation, material flow, and product manufacturing for our 3D printed phone holders.
- In the 2022 term, I fully designed our Shareholders Report which won the 'Shareholders Report of the Year' Award

PROJECTS

Song Genre Prediction Model | **Github**
- Data Analysis and Machine Learning Model which analyzed over 40,000 songs to predict genres based on numeric sound metrics, with a max ROC-AUC score of 0.915.
- Used scikit-learn, Numpy, Pandas, Seaborn, Matplotlib visualization, and techniques such as hyperparameter tuning and adaptive boosting.

CIFAR-10 Image Classifier | **Github**
- Convolution Neural Network in Pytorch and scikit-learn which classifies images in the CIFAR-10 database.
- Trained over 50,000 images over 15 epochs to achieve an accuracy of 70%.

Autonomous Extreme-Weather-Simulated Rescue Robot | **Github**
- Rescue robot which avoids obstacles, identifies people, and returns these people to safety
- Designed mechanical drivetrain and rescue mechanism, with actuators, and ultrasonic and IR sensors.
- Wrote all software in C to drive to any of 4 quadrants, and return after saving a person.

Modular Solar Panel Hydroponic Model | **Slideshow**
- Solar Powered hydroponic model that is stackable, to save space and resources
- Fusion360 and Blender 3D-modeled nutrient film technique hydroponic system.
- Calculated 41.6% less energy consumption than other hydroponic competitors.
- 1st Place Winner of the University of Ottawa 2022 Winter Designathon

EDUCATION

University of Waterloo, Candidate for Basc. in Mechatronics Engineering 2022-2027
GPA: 3.97, 94%