Mark Do

Portfolio Website | mdo@uwaterloo.com | GitHub | LinkedIn

Education

University of Waterloo   Sep. 2022 – Present

Candidate for Bachelor of Mechanical Engineering

- Dean's Honors List: Fall 2022 - 4.0 GPA

- President's Scholarship of Distinction: Awarded for a 95%+ admission average.

Technical Skills

Software: Python, C++, CSS, HTML, JavaScript, Git, GitHub, Arduino

Design: Siemens NX, SolidWorks, AutoCAD, Fusion360, Blender

Manufacturing: 3D-Printing, Laser-cutting, Soldering, GMP

Projects

Emotional Cardiography (ECG) / *Python, C++, JavaScript, OpenCV, TensorFlow (Keras), Flask*

- ECG uses OpenCV, machine learning & a KY-039 heartbeat sensor to monitor multiple patients emotional and physical state, giving doctors early detection & improved accessibility to hospital safety.
- Built and trained a Convolutional Neural Network with TensorFlow Keras that detects human emotions based off facial features, with ___% test set accuracy.
- Transferred data from an Arduino C++ program & Python ML program to a website built with JavaScript in real time using backend framework flask.

Jesture Bot (Hand Motion Controlled RC Car) / *C++, Arduino, OpenCV*

- Built a Bluetooth RC Car that works as a portable speaker controlled by hand gestures.
- Used OpenCV to detect hand positions- left hand for car movement and right hand for speaker volume.
- Communicated with Arduino Due using PySerial and an HC-05 Bluetooth module.
- Used a logic level converter to drop voltage levels from Arduino to 3.3V for Bluetooth module to function.

Work Experience

Production Technician / *Python, Data Analysis, Scikit Learn, Pandas, Technical Writing*   Jan. 2023 – Apr. 2023

Olymel S.E.C

- Conducted studies on ingredients, machinery, production defects & yields for optimization reports.
- Aggregated & preprocessed dataset with Pandas library, conducted data analysis using sci-kit learn.
- Wrote Python scripts to automatically call linear regression for all combinations of selected features from the dataset and output features groups with highest correlation.
- Created visually appealing figures and charts with Matplotlib and Excel to clearly convey data for recommendation reports.

Experience

Satellite Thermals Team Member / *SolidWorks, Siemens NX, Thermal Models*   Sept. 2022 – Jan. 2023

UWOrbital

- Simulated CubeSat satellite models in Siemens NX to investigation chassis performance in space.
- Developed simulation models for max and min flux test cases using surface-to-surface contacts.
- Researched thermal & optical properties for various materials to improve thermal model accuracy.

Fyra Finance Educational Project / *Project management, Finance Research*   Sept. 2021 - June 2022

Co-Founder

- Taught…