Eddy Wang *Computer Science Student*

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EDUCATION

2023/09 – 2028/04 **Candidate for Bachelor of Computer Science**
Waterloo, Canada *University of Waterloo*

SKILLS

Coding Languages and Platforms
Python, Java, C, Javascript, HTML, CSS, VS Code, Pandas, Github, GitBash, Django, NumPy, OpenCV, TensorFlow Keras, Expo, React, Arduino IDE, Vagrant, VirtualBox, Microsoft OS, PathPlanner, NetworkTables, Windows Powershell, Linux Shell Scripting, Atlassian Confluence

Concepts
OOP, Functional Programming, HTML Requests, Recursion, Machine Learning, Lists, Dictionaries, Sort and Selection, Inheritance, PID Control Loop, Design Recipe, Data Definitions and Algorithms, GPIOs, Interrupts and Timers, DMA, ADCs

EXPERIENCE

Firmware Development Intern at Ford
May 2024 - August 2024
- Implemeneted unit tests on software modules, achieving a 30% increase in coverage by initializing states for each branch
- Developed automation scripts to significantly reduce manual testing time by 50% and improve code accuracy.
- Debugged MISRA code violations to ensure compliance with industry standards and improving system reliability.
- Measured CPU usage and start time, leading to optimizations while triaging PRs to resolve performance issues.

Co-founder of Auxilium (Website Designer, Financial Officer)
April 2020 - Current
- Organized 3 talent shows with over 200+ participants to increase the limited social interactions during the pandemic
- Developed and maintained a user-friendly website for Auxilium (used embed links while using the style guide)
- Registered Auxilium as a recognized non-profit and tracked expenses and earnings to maintain a cost-effective system
- Pitched the idea of a mentorship program within Auxilium and led the formation of over 150 mentor-mentee pairings

PROJECTS

Bird Classifier - Machine Learning
December 2023 - Current
- Learned basics of machine learning through Google's crash course (introduction to TensorFlow and training/testing data)
- Categorized bird species into NumPy arrays and partitioned the data set into a training data and a testing data
- Used TensorFlow Keras to build a sequential model and added Conv2D filters to increase the depth of image perception
- Saved evaluated and trained model as a JSON file to be used to predict the bird species of a singular image

Hand-Controlled Robotic Arm
June 2023
- Implemented Google's media pipe computer vision library to track hand motion using multiple landmarks
- Built arm by installing servos for each joint of the arm and wired them to an Arduino, dedicating each servo to a pin
- Committed code to main repository in GitHub, while creating branches for each method of sending data to the servos
- Created an algorithm to count the number of fingers held up by comparing the positions of knuckle landmarks

OOP Arm Programming
January 2023
- Applied OOP for 4 subsystems, containing multiple objects including motors, motor controllers, and sensors
- Accessed NetworkTables to send data (including encoder values and setpoints), which helped make testing more effective
- Utilized PID control for the arm's motion and explored the effect of different control types and trapezoid profiling
- Organized project by going through prototyping phases, inverse kinematics calculations, and simple motor configurations

ADDITIONAL INFORMATION

Clubs/Interests
UW Midnight Sun Design Team, Varsity Waterloo Figure Skater, Founder of 3EPrintingCreations, National Figure Skater, UW Game Dev Club, Member of Waterloo's Debate Society

Awards
ARCT Performers Piano First Class Honours, House of Commons Certificate (Auxilium), Debate Xerxes Cup Finalist, DELF B2, WHMIS 2015, Worker Health and Safety Awareness