# Eddy Wang *Computer Science Student*

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## EDUCATION

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

## EXPERIENCE

**Firmware Development Intern at Ford**
*May 2024 - August 2024*
- Implemented 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 improved 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 using Django (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

**RizzVision - HTN 2024**
*September 2024 - Current*
- Developed an AI-powered system using a Raspberry Pi 5 with a webcam, mic, and speaker to analyze real-time conversations
- Integrated AI inference through Groq API for speech/sentiment analysis, providing users with real-time suggestions
- Used Flask for UI and MongoDB to store conversation data including the report, managing data between backend and frontend
- Leveraged AssemblyAI for STT, OpenAI for TTS, and OpenCV with a custom-trained model for emotion detection

**Bird Classifier App - 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
- Developed app in Android Studio using Flutter to inference captured images as image bytes with the Tflite model

**Hand-Controlled Robotic Arm**
*June 2023 - Current*
- 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

## SKILLS

**Coding Languages and Platforms**
Python, Java, C, Javascript, C++, Flutter, VS Code, Pandas, Github, GitBash, Django, NumPy, OpenCV, TensorFlow Keras, React, Arduino IDE, Vagrant, Android Studio, VirtualBox, Unity, NetworkTables, Linux, Atlassian Confluence, Meta SDK, Groq, Flask, MongoDB, OpenAI

**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, Unit Testing, Agile Sprint Planning, SCRUM, TTS, STT

## ADDITIONAL INFORMATION

**Clubs/Interests**
UW Midnight Sun Design Team, Varsity Waterloo Figure Skater, 3D Printing Enthusiast, National Figure Skater, UW Reality Labs (VR/XR), 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