Andrew Chen

aychen00@student.ubc.ca

Education

University of British Columbia
Engineering Physics

2018 – 2023
Vancouver, Canada
c.GPA 3.7/4.0

Skills

Software
Python, Java, JS, C++, MATLAB, HTML, CSS, PyTorch, OpenCV, Linux, Git, EC2, Reading Documentation

Electrical
Oscilloscope, Multimeter, Soldering, Arduino, STM32, KiCad, Redstone

Mechanical
SolidWorks, 3D Printing, Onshape, Laser Cutting, Machining

Courses

Completed
- Principles of Software Construction
- Machine Design
- Intro to Instrument Design
- Signals and Systems

In Progress
- Practical Deep Learning for Coders
- Digital Systems and Microcomputers

Interests

- Game Development
- Graphic Design
- Video Editing
- Physics

Technical Experience

Software Engineering Intern
EyeCloud
Jan 2020 – Apr 2020
- Worked with the AI Solutions team to prototype a real-time medical imaging device running off a Raspberry Pi, using Python and Intel's OpenVINO toolkit
- Optimized script by switching to an asynchronous inference pipeline, boosting FPS by over 100%
- Assisted in testing and debugging of C++ code for stereo camera calibration
- Helped R&D design a better user workflow, translate documentation, and collect data for calibration of IR camera

Avionics Engineer
UBC AeroDesign
Sep 2020 – Present
- Deployed a Java WebSocket server and React based web-app on an EC2 instance in order to relay data from plane to ground
- Researched and implemented data filtering and logging in order to eliminate chance of disqualification
- Currently redesigning communication system to reduce complexity, increase reliability, and lower delay

Projects

Recycle Bot
C++, STM32, Mechanical and Circuit Design
- Worked with a team to design and prototype a robot that picks up soda cans and returns them to a recycling bin without any human input
- Designed and optimized an H-bridge based motor circuit for easy assembly and over-voltage protection, which failed 40x less than previous years
- Helped with debugging and optimizing PID control code for line following

Cyber Hobbes
Python, discord.py, MongoDB
- Created a bot using the discord.py API for daily use in a student Discord server, hosted on Heroku then migrated to a Raspberry Pi
- Wrote commands for music playing, moderation, role assignment, and entertainment, with an average of 30 calls per day
- Linked bot to a MongoDB database to record student satisfaction throughout each semester

Every Evangelion Frame
Python, C++, OpenCV, AWS
- Wrote a C++ program which utilized OpenCV to split videos into unique frames based on similarity between images using the SSIM in order to capture details not typically noticed by viewers
- Wrote a Python script to post frames to Facebook. Used an Amazon EC2 instance for 24/7 uptime and crontab to automate posting
- Reached 40k followers and 200k monthly post engagements within half a year

Monitor Arm
SolidWorks, 3D Printing, Mechanical Design
- Designed a custom dual-monitor stand using SolidWorks and printed it using a FDM printer
- Utilized aluminum rods for structural integrity in conjunction with 3D printed joints for articulation, overall costing 20% the price of a market product
- Performed bending stress calculations to ensure reliability of aluminum rods