ANDREW LIU

✉ andrew.liu2@uwaterloo.ca · 🔗 andrewliu00 · 🐙 andrewliu00 · 💻 andriu.me

SKILLS

Languages: JavaScript, C++, C, Python, HTML5, CSS
Tools/Technologies: React.js, Git, LaTeX, Excel
Design: Figma, Photoshop, Lightroom

EXPERIENCE

Waterloo Hyperloop Team — Waterloo, ON
Embedded Systems Team — Dec 2019 - Present
- Implemented new motor control system for Linear Induction Motors by outputting a PWM signal to achieve maximum efficiency using **C++**
- Displayed the data received from sensors on the pod dashboard by connecting to serial ports

First Robotics Team 4001 — Markham, ON
Subsystems Team — Sep 2017 - Jun 2018
- Used **Java** to program the drive train for the robot to use during competition
- Implemented the usage of **PID** (proportional-integral-derivative) controllers to monitor and correct robot movement
- Collaborated with a team of 10 programmers to reduce bugs during trials

Markham Getting Together — Markham, ON
Website Developer — Oct 2017 - Jun 2018
- Developed the landing page for the website of a youth council focused on social justice
- Designed and programmed a modern UI from the bottom up using **HTML**, **CSS**, and **JavaScript**

PROJECTS

MuseFlare *C++* — 🐙 MuseFlare
- Developed a reactive LED lamp that uses a sound sensor connected to an **AVR microcontroller** to monitor the sound level in the surrounding environment
- Used **FastLED** library to detect and analyze analog signals which then manipulated RGB values and calculated how many lights were to be activated

Laser Gate Detection *C, VirtualBox*
- Designed and implemented a **state machine** based **embedded system** in **C** on a **Raspberry Pi**
- Used lasers and photodiodes to detect and track objects entering or exiting an area
- Implemented a **watchdog timer** to prevent runtime errors

BiteShare *Figma* — 🐙 BiteShare
- Prototyped an app that tracks a user's meals throughout the day, using pictures to motivate them into healthy eating in a fun and creative manner
- Applied user-centric design principles to design the entire mobile application

AWARDS

Hack the North 2019 Bloomberg Challenge — **Bloomberg L.P.** | Sep 2019
This award was given to the first team to successfully complete a series of cryptography challenges involving strong code breaking, logic, and computation skills.

WatPD Engineering Scholarship — **University of Waterloo** | Sep 2018
This scholarship was awarded to students who demonstrated academic excellence and potential to thrive in a professional skill environment as assessed through the Admission Information Form.

EDUCATION

University of Waterloo — Waterloo, ON
B.ASc in Computer Engineering, Expected Graduation 2024 — Sep 2018 - Present