

# ANDREW LIU

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## SKILLS

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**Languages:** JavaScript, C++, C, Python, HTML5, CSS

**Tools/Technologies:** React.js, Git, L<sup>A</sup>T<sub>E</sub>X, Excel, VSCode

**Design:** Figma, Photoshop, Lightroom

## EXPERIENCE

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### Software Developer

Waterloo Hyperloop Team

Waterloo, ON

Dec 2019 - Present

- Worked on the **embedded** and **website** subteams
- 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
- Used **React.js** with **TypeScript** to create fluid and responsive page components
- Redesigned and wireframed new website pages using **Figma**

### Subsystems Developer

First Robotics Team 4001

Markham, ON

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

### Website Developer

Markham Getting Together

Markham, ON

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**

### Swim Instructor

Richmond Hill Swimming Dragons

Richmond Hill, ON

Jan 2016 - Jun 2019

- Worked with a team of instructors to provide swimming instruction to children of varied ages
- Communicated effectively with parents and children concerning lessons and progress, and successfully passed over 200 swimmers
- Created and tailored specific lesson plans to allow swimmers to increase their proficiency in swimming quickly and smoothly

## PROJECTS

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### Re:Action | React.js, Python, MongoDB

 Re:Action

- Developed a web app at Hack the Valley that allows users to query keywords and visualize any relevant tweets according to their geographical locations around the world
- Used **React.js**, **TypeScript**, and a custom library to create a seamless and intuitive front-end
- Used the Tweepy **Python** library to access **Twitter API** and scrape for relevant tweets
- Stored relevant tweets using **MongoDB Atlas** to be used later in data visualization

### MuseFlare | C++

 MuseFlare

- Developed a reactive LED lamp that uses a sound sensor connected to an Arduino 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

## AWARDS

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### 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

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### University of Waterloo

B.ASc in Computer Engineering, Expected Graduation 2024

Waterloo, ON

Sep 2018 - Present