

Davis Liu

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Education

University of Waterloo,
Bachelor of Software Engineering
Waterloo, ON
Sept 2024 – Present

Skills

Languages: C++, Java, JavaScript, TypeScript, HTML/CSS, C, Python
Fields: Algorithm Design, Robotics, Web Development (Full-Stack), App Development, Computer-Aided Design
Non-Technical: Leadership, Problem Solving, Mandarin Chinese

Experience

Programming Lead at Unionville High School VEX Robotics Team

Senior Member: Sept 2022 – May 2023

Executive: May 2023 – June 2024

- Led software development for operator-controlled and **fully autonomous** driving on **3 independent subteams**
- **Mentored junior members** in software development, physical design, and CAD
- Developed and maintained an **adaptable programming library** for autonomous feedback control, on-screen selection menus, and debugging, which was used in **6 competition events over 2 years**
- Collaborated with mechanical and CAD divisions on designing and building

Projects

DoorSense (React Native, TensorFlow, Python)

Oct 2024 – Dec 2024

- Collaboratively built a **smart door system** that supports doorstep monitoring, weather displays, and mobile notifications
- Leveraged **custom-trained TensorFlow models** to identify visitors, package deliveries, and potential intruders
- Integrated smart door system with a React Native mobile app to control smart door functionality

ShopSmart (React Native, TypeScript)

Oct 2024 – Current

- Wrote the backend for a React Native mobile app that helps users **optimize shopping trips** based on prices and distances
- Applied **Dijkstra's algorithm with bitmasks** to compute an optimal way to purchase groceries

GuideBot — Hack the 6ix 2023 (Arduino, C++, JavaScript, Tensorflow) Aug 2023

- Utilized **robotics, embedded software, and object recognition** to create an urban-center navigation device for visually impaired individuals
- Won award for **“Best Accessibility Hack”**

IWitness — YRHacks 2023 (HTML/CSS, JavaScript, Tensorflow)

May 2023

- Used **TensorFlow machine learning libraries** to create a surveillance system for first responders
- Obtained **2nd Place Prize** and **“Smart Cities”** award

UACC Contest (C++)

Jan 2024

- Co-authored a competitive programming contest hosted on the DMOJ judge, written by **170+ contestants**

Awards

Euclid Mathematics Contest - Distinction 2023, 2024

- Score within the top 14% in 2023

Canadian Computing Competition - Distinction 2023, 2024

- Score within the top 6.5% in 2023

Canadian Open Mathematics Competition - Distinction 2023