

# Lucas Jin

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## Projects

### Lips Lips Revolution - Hack the North 11 📄

Sept 2024

- Created a lip syncing game with a userbase of over **50 people** using the **Symphonic Labs Mamo API** and **OpenAI embedding models**.
- Reduced latency from **30** seconds to **7** seconds by **reverse-engineering** the Mamo API with websockets.
- Utilized **Next.js** for rapid full stack development and QR codes and **MongoDB** for user authentication/tracking.

### Proteful - Hack404 📄

July 2025

- Developed a mobile safety app for protestors using **Expo** and **React Native**, enabling real-time navigation and coordination
- Integrated **Firebase Realtime Database** to synchronize user interfaces with live updates across all devices
- Implemented an **A\* pathfinding algorithm** to dynamically route users to destinations while avoiding mapped danger zones

### FRC 8729 Attendance Bot 📄

Nov 2024 - Present

- Utilized the **Discord API** with a **SQLite database** and **Python** to track attendance of a team with **90+ members** with a clock-in/clock-out mechanism.
- Integrated a custom calendar format attendance spreadsheet with the **Sheets API** for more accessibility.

### Drama Production Manager 📄

Dec 2024 - June 2025

- Developed a web application to automate attendance tracking and scheduling for school drama productions (estimated **100+** users) for ICS4U project using a **PERN** stack.
- Utilized **Docker** and **Agile development** for more efficient collaboration and quicker deployment.

## Skills

**Languages:** Javascript/Typescript, Python, C++, SQL

**Frameworks, APIs and Services:** React.js, Next.js, Node.js, Express, Firebase, MongoDB, PostgreSQL

**Tools/Skills:** Github, Git, VSCode, L<sup>A</sup>T<sub>E</sub>X, Docker, Agile development

## Experience

### Software Team Lead 📄

Ottawa, Ontario

FRC Team 8729 - Sparkling Youth Robotics Club

June 2023 - June 2025

- Instructing **19** software members in the development of a command based robot using **Java** and **OOP** principles.
- Integrating software like **computer vision** pipelines and **PID tuning** with hardware systems for precise commands.

### Programming Intern 📄

Remote

STEM-E

Sept 2024 - Present

- Using a **FERN** stack to automate the processing of **1000+** volunteers.
- Following an **agile methodology** with user stories and **DoD** criteria to manage a quality project workflow.

### Software Team Lead / Mechanical Member 📄

Ottawa, Ontario

Vex Team 50226A - Merivale Vex Robotics

Oct 2023 - Feb 2025

- Developed autonomous and teleoperated functionality despite hardware limitations using **C++** and **OOP**.
- Gained hands-on experience with **pneumatics** and designing custom mechanisms, including a conveyor belt **gearbox**.

## Education

University of Waterloo, Waterloo, Ontario

Sept 2025 - Future

Incoming BCS, Honours Computer Science with Co-op

- Relevant Courseware:** Designing Functional Programs (Advanced), Algebra (Advanced), Calculus 1 (Honours)

Merivale High School, Ottawa, Ontario

Sept 2021 - June 2025

International Baccalaureate DP (42/45)

Average: 97.3

- Clubs:** Math (Executive, 2021-2025), Mock Trial (Executive, 2022-2025), CS (Member, 2021-2025)

## Awards

- René Descartes National Scholarship and President's Scholarship of Distinction (\$22k)
- Overall Track 1st Place - \$1000 (Hack404 - July 2025) 📄
- Best Use of MongoDB Atlas (Hack the North 11 - Sept 2024) 📄
- (Solo) Best Home Track Project (Lazy Hacks - Dec 2024) 📄
- FRC Team 8729 - Division Champion (FIRST Ontario Provincial Championship Technology - Apr 2024) 📄