

# Lucas Jin

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## Education

- University of Waterloo**, Waterloo, Ontario Sept 2025 - Present  
*BCS, Honours Computer Science with Co-op*
- **Clubs:** Biomechatronics Exo Software Lead, Wat.AI FlockRL Machine Learning Engineer, CS Club Web Committee

## Projects

- Pixel Pets Plugin - Obsidian** Jun 2025 - Present
- Developed a custom Obsidian plugin using **TypeScript** that spawns animated pixel pets with **1400+** downloads.
  - Engineered a **class-based** animation system using custom **CSS** properties and DOM manipulation to support multiple pets and persist state across sessions.
  - Created a lightweight **vector storage** and **retrieval system** with embedding indexing and similarity search over **IndexedDB** to support a **RAG** chatbot system.
  - Integrated **ESBuild** to bundle external dependencies like sprite sheets for plugin architecture compatibility.
  - Implemented a **deployment pipeline** with Github Actions to automate new update releases.

- 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.

- Discord Attendance Bot - FRC 8729** 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
- Built a **PERN** stack web application to automate attendance tracking and scheduling for drama productions, implementing **RESTful** routes following the **MVC** design pattern.
  - Utilized **Docker** and **Agile development** for more efficient collaboration and quicker deployment.

## Experience

- Programming Intern** Remote  
*STEM-E* Sept 2024 - July 2025
- Developed a full-stack application using a **FERN** stack to automate onboarding for 1000+ volunteers.
  - Automated timesheet creation for each volunteer via Sheets API, saving **5 hours** of manual setup per week.
  - Followed an **agile methodology** with user stories and **DoD** criteria to manage a quality project workflow.

- Software Team Lead** Ottawa, Ontario  
*FRC Team 8729 - Sparkling Youth Robotics Club* June 2023 - June 2025
- Instructed **19** software members in the development of a command based robot using **Java** and **OOP** principles.
  - Integrated **computer vision** pipelines and **PID tuning** with hardware systems, improving response speed by **3x**.

## Technical Skills

- Languages:** Javascript/TypeScript, Python, SQL  
**Frameworks, APIs and Services:** React.js, Next.js, Node.js, Express, Firebase, MongoDB, PostgreSQL, OpenAI API  
**Tools/Skills:** Github, Git, VSCode, L<sup>A</sup>T<sub>E</sub>X, Docker, Agile development

## Awards

- René Descartes National Scholarship and President's Scholarship of Distinction (\$22k)
- Overall Track 1st Place - \$1000 (*Hack404 - July 2025*) 🔗
- (Solo) Best Pitch (*Terrahacks 2025 - Aug 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*) 🔗