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

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.

Pixel Pets Plugin - *Obsidian* ⌁   *Jun 2025 - Present*
- Developed a custom Obsidian plugin using **Typescript** that spawns animated pixel pets with **1000+** downloads.
- Engineered a **class-based** animation system using custom **CSS** properties and DOM manipulation to support multiple pets and persist state across sessions.
- 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.

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**.

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**.

Technical Skills

Languages: Javascript/Typescript, Python, SQL
Frameworks, APIs and Services: React.js, Next.js, Node.js, Express, Firebase, MongoDB, PostgresSQL, OpenAI API
Tools/Skills: Github, Git, VSCode, LaTeX, 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*) ⌁