

# JOEY LU

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## Technical Tools

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**Languages:** Python, Java, C, C++, C#, HTML/CSS, JavaScript, SQL, Flutter/Dart, Functional Programming  
**Developer Tools:** PyTest, AWS, VS Code, Xcode, Android Studio, Git, GitHub, Figma, PowerShell, NumPy, PyTest  
**Libraries/Framework:** React, FastAPI, Linux/Unix, Node.js

## Experience

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### Waterloo Aerial Robotics

November 2024 – Present

*Autonomy Developer*

*Waterloo, ON*

- Developed **modular camera configuration classes** for **OpenCV** and **PiCamera** using Python, and updated base-camera settings enhancing flexibility and scalability in the camera factory's initialization process
- Expanded **test coverage**, using **PyTest**, with dedicated cases for camera creation, **OpenCV**, and **PiCamera** configurations, increasing reliability and stability and eliminating **100%** configuration-related issues
- Utilized Github version control for a large, multi-module codebase, integrating updates seamlessly with code reviews

### SoarToWorld

December 2023 – March 2024

*Web Developer Intern*

*Richmond Hill, ON*

- Assisted in development of front-end websites using **React** and **CSS** adhering to customer demanded UI features
- Ensured the quality of **50+ screens** through extensive testing and debugging, leading to higher customer satisfaction
- Worked and integrated well within a team environment to **successfully deliver products on time**, resulting in increased organizational efficiency

### City of Vaughan

March 2023 – June 2023

*Swim Instructor*

*Vaughan, ON*

- Taught various levels with **positivity and active involvement**, achieving **100% positive feedback**
- Provided consistent, **clear verbal and written feedback** consistently to **~30 students**, leading to high skill mastery
- Followed class plans, ensuring all objectives were **met on time**, leading to consistent student progress

## Projects

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### ProteccAPI | *Node.js, React, CSS*

January 2025

- Built an **NPM package and VSCode extension** to detect and manage sensitive API keys, automate .gitignore and .env creation, and deliver advanced security insights through code analysis, with over **100 downloads** for **UofTHacks**.
- Integrated **Git pre-commit hooks** with Husky to prevent **accidental commits** with sensitive API keys
- Thoroughly **analyzes Node modules and packages** to identify suspicious lifecycle scripts and typosquatting, perform npm audits, and uncover vulnerabilities, ensuring robust security

### Tracksite | *React, MySQL, FastAPI, Node.js, CSS*

September 2024

- Developed a **full-stack** management application enabling users to organize and access applications and websites featuring folder creation and bookmark saving, with a **user-friendly** interface to enhance productivity
- Implemented **API Routes** to handle user requests and data management for the back-end

### SoundVeil | *JavaScript, HTML, CSS*

April 2024

- Developed an application that hides data in the **least significant bits of audio**, differences too subtle for the human ear, and enables **encryption and decryption** using the Vigenère cipher, created for **YRHACKS**
- Created a user-friendly interface with HTML/CSS and JavaScript for **functionality and data-hiding process**

### Stubook | *Flutter, Dart*

October 2023

- Designed a **cross-platform iOS/Android app** to simplify daily study routines, featuring a to-do list, calendar, and grades calculator/storage for efficient organization and tracking of tasks, with **~100 downloads and 5 stars rating**
- Built **clean and responsive layouts** that adapt to various devices, ensuring accessibility for all

## Honours and Awards

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**Canadian Senior Mathematics Competition:** Rank 129/12305 (Top 1%), Group IV Honour Roll

**Canadian Computing Competition:** Rank 352/3948 (Top 9%), Award of Distinction

**Euclid Math Competition:** Rank 1518/27650 (Top 6%), Award of Distinction

## Education

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### University of Waterloo

Sep. 2024 – Apr. 2029

*Bachelor of Computer Science*

*Waterloo, ON*

- Awards:** Randall J. Howard & President's Distinction Scholarships (\$10,000 Total)
- Coursework:** Algorithm Design, Functional Programming, Software Dev Tools, Linear Algebra, Calculus, Algebra