Larris Xie

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Education

University of Waterloo Sep 2024 - May 2028
Bachelor's of Computer Science **4.0/4.0 GPA**
Nortel Institute Scholarship Recipient ($1750)
President's Scholarship of Distinction Recipient ($2000)

Skills

Languages:	C++, Python, JavaScript, TypeScript, Java, SQL, C#, R
Frameworks:	React, NextJS, ExpressJS, NodeJS, Flask, PHP Laravel
Database:	MongoDB/NoSQL, Firebase, SQLite, MySQL
DevOps/Tools:	Docker, Git, GCP, AWS

Experience

Undergraduate Research Assistant Waterloo, CAN
University of Waterloo Jan 2025 - Current

- Researching **Security and Privacy in Machine Learning**, supervised by Dr. Florian Kerschbaum.
- Constructing a protocol for **Vertical Federated Learning** to securely align and train on distributed time-series event sequences, leveraging cryptography and differential privacy to protect sensitive data.

Software Engineering Intern Remote
Jobeyze Canada Dec 2024 - Current

- Spearheaded the development of an **automated web scraper** using Selenium and PHP Laravel to extract **1200+ job postings** across multiple platforms.
- Built a **RESTful API** using Laravel, enabling seamless integration with a MySQL database schema for real-time updates of job postings and application links.

Student Researcher Remote
Lumiere Education Aug 2022 - Feb 2023

- Analyzed a financial transaction dataset using Python and trained a XGBoost classification model to classify fraudulent organizations with **99.9315% accuracy** and a **0.001% false positive rate**.
- Published a peer-reviewed research paper in the **Journal of High School Science** under the supervision of Dr. Maria Konte.

Projects

Autonomous Vision Systems for Self-Driving Cars *Python, Tensorflow*

- Developed and fine-tuned object detection pipelines for autonomous vehicles using techniques such as **neural networks, CNNs, transfer learning models (VGG16), and YOLO**.
- Conducted a comparative analysis of different model architectures, evaluating trade-offs between speed and accuracy in the context of autonomous driving.

The Fastest Root *React, NextJS, ExpressJS, NodeJS*

- Architected a full-stack web app that retrieves **real-time pricing data** from grocery stores through web scraping with Puppeteer.
- Designed a route optimization algorithm and visualized the cheapest grocery shopping route using the Google Maps API, delivering time and cost-saving insights to users.
- Winner at Ignition Hacks (**400+ participants**).

Saving Christmas *C#, Unity*

- Engineered a 2D Platformer Game with fluid movement mechanics, dynamic camera tracking, and collision detection across multiple levels.
- Applied **OOP principles** to design modular and reusable components, such as interaction interfaces, dialogue systems, and player movement scripts.

Awards

Fermat Mathematics Contest: School Champion and Honour Roll (**Top 1%**)
Canadian Computing Contest: Distinction (**Top 25%**)