

LARRIS XIE

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EDUCATION

University of Waterloo

Bachelor's of Computer Science

Nortel Institute Scholarship and President's Scholarship Recipient (\$6000)

Sep 2024 - May 2028

4.0/4.0 GPA

EXPERIENCE

Shopify (incoming)

Software Engineer

May 2025 - Aug 2025

WAT.ai

Machine Learning Engineer

Mar 2025 - Current

- Building an AI assistant for independent and safe senior living, integrating OpenCV-based hazard detection with a real-time voice interface powered by Whisper.
- Engineered a multi-agent **RAG pipeline** to create curated profiles for seniors, achieving **90%** accuracy in user intent recognition and enabling seamless automation of everyday tasks.

University of Waterloo

Research Assistant — Security and Privacy in ML with Dr. Florian Kerschbaum

Jan 2025 - Apr 2025

- Constructed a protocol for **vertical federated learning** in PyTorch to securely align and train on distributed credit card time-series sequences.
- Fine-tuned **transformer models** from Research on Tabular Deep Learning and optimized hyperparameters with **Optuna**, achieving a **95% F1 Score** despite a **10000:1** class imbalance.
- Investigated real-world challenges in deploying federated learning for fraud detection, focusing on data privacy, regulatory constraints, and coordination across financial institutions.

Jobeyze

Software Engineer

Dec 2024 - Mar 2025

- Spearheaded the development of an **automated web scraper** using Selenium and PHP Laravel, extracting **1200+** **job postings** and eliminating manual collection entirely.
- Built a **RESTful API** with a structured **MySQL** schema, enabling real-time syncing of postings and application links across platforms used by thousands of active users daily.

Lumiere Education

Machine Learning Researcher

Aug 2022 - Feb 2023

- Analyzed a financial transaction dataset using Python and trained an **XGBoost 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

On The Dot (1000+ users) [↗](#) | React, TypeScript, Supabase, PostgreSQL, Python, GCP

- Launched a trivia game with persistent game state and anonymous user tracking—**1600+** **plays in a week**.
- Architected a Supabase backend with custom PostgreSQL functions to achieve **20ms read/write latency** on **10K+** queries for real-time statistics tracking and rate control.
- Designed an animated React frontend with Framer Motion and real-time progress updates.

Off The Hook (UofT Hacks Winner) [↗](#) | React, JavaScript, Flask, MongoDB, OpenAI

- Engineered an alternate reality game (ARG) simulating phishing attacks by implementing secure **JWT-based authentication**, ensuring a tokenized login flow for simulated hacker interaction.
- Deployed a Flask and MongoDB backend with scalable **RESTful APIs** to simulate phishing workflows; integrated an **OpenAI chatbot** to deliver real-time guidance through a terminal interface.

Autonomous Vision Systems for Self-Driving Cars [↗](#) | Python, TensorFlow

- Developed and benchmarked object detection pipelines for autonomous vehicles, using architectures of **neural networks, CNNs, transfer learning models (VGG16), and YOLO**.
- Conducted a comparative analysis of model performance across time and accuracy metrics, demonstrating YOLO's high-speed video processing with **sub-60ms inference**.

SKILLS

Languages: Python, Java, JavaScript, TypeScript, C, C++, C#, Ruby, SQL, R
Frameworks: React, NextJS, ExpressJS, NodeJS, Flask, Rails, PyTorch, TensorFlow
Database: MongoDB/NoSQL, Supabase, Firebase, SQLite, MySQL, PostgreSQL
DevOps: Linux, Docker, Git, GCP, AWS, Azure, Selenium