

LARRIS XIE

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EDUCATION

University of Waterloo

Bachelor's of Computer Science

Sep 2024 - Apr 2028

4.0/4.0 GPA

Scholarships: *Nortel Institute, President's Scholarship, President's Research Award (\$7500)*

Relevant Coursework: Object-Oriented Software Development (Enriched), Data Structures and Data Management (Enriched), Algorithm Design and Data Abstraction (Enriched)

EXPERIENCE

Shopify

May 2025 - Aug 2025

Software Engineer

- Orchestrated a **100% uptime data migration** from legacy APIs to new service endpoints while ensuring full **backwards compatibility** through shadow writes, backfilling **5B+ rows**, and staged rollouts.
- Designed and implemented scalable **data models and GraphQL APIs** in **Ruby on Rails**, powering a fully extensible cash management experience for **2M+ active retailers**.
- Engineered full-stack features for Shopify Point of Sale (POS) in **React Native and Typescript**, resolving critical race conditions in async workflows to reduce failure rate by **40%**.

Meta x MLH

May 2025 - Aug 2025

Production Engineering Fellow

- Deployed and managed **Linux infrastructure** on a CentOS VPS, leveraging system calls and kernel-level debugging at the OS layer, and **Docker** and **NGINX** at the application layer to improve reliability.
- Configured system monitoring with **Prometheus, cAdvisor, and Grafana**, leveraging low-level resource metrics (CPU, cache misses, memory usage, I/O throughput) to cut bug detection time by **80%**.
- Automated **CI/CD workflows** with GitHub Actions, integrating testing frameworks, security scans, and performance monitoring to streamline deployments and improve system reliability.

University of Waterloo

Jan 2025 - Present

Undergraduate Research Assistant — Security and Privacy in ML

- Developed a **vertical federated learning protocol** in **PyTorch** that leverages **transformer models and a GAN** to train and serve secure fraud detection across distributed credit card sequences.
- Implemented encrypted inference using Facebook's **CrypTen** framework, applying **secure multi-party computation** to enable membership inference resistant cross-institution serving with a **95% F1 Score**.

Jobeyze

Dec 2024 - Mar 2025

Software Engineer

- Spearheaded the development of an **automated web scraper** using Selenium and Laravel, extracting **1200+ job postings daily** 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.

PROJECTS

On The Dot (2000+ users) [↗](#) | Python, PostgreSQL, React, GCP

- Launched a trivia game with persistent game state and anonymous user tracking—**10k plays in 3 months**.
- Architected a Python backend with custom **PostgreSQL** functions to achieve **20ms read/write latency** on **30K queries/day** for real-time statistics tracking and rate control.

LifeOS (Hack the 6ix Winner) [↗](#) | FastAPI, Redis, Docker, Qdrant, PostgreSQL, React, AWS

- Engineered a **distributed video processing pipeline** using **Redis Queue** that orchestrates semantic analysis with TwelveLabs, embedding generation, and cloud storage via **asynchronous workers**.
- Deployed a **containerized API service** with **Docker**, FastAPI, Pydantic models, and JWT middleware; supported modular features like authentication, video ingestion, memory search, and chat.

Published Machine Learning Research Paper [↗](#) | Python, XGBoost, Pandas, NumPy

- 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 paper in the **Journal of High School Science** under the supervision of Dr. Maria Konte.

SKILLS

Languages: Python, C++, C, Java, JavaScript, TypeScript, Ruby, Golang, SQL, GraphQL
Frameworks: React, NodeJS, FastAPI, Flask, Ruby on Rails, PyTorch, TensorFlow
Databases: MongoDB/NoSQL, Elasticsearch, SQLite, MySQL, PostgreSQL, Redis
DevOps: Linux, Docker, K8s, Git, GCP, AWS, Azure, GitHub Actions, NGINX, Grafana