Larris Xie

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EDUCATION

University of Waterloo — Sep 2024 - Apr 2028
Bachelor's of Computer Science — **4.0/4.0 GPA**
Scholarships: *Nortel Institute, President's Scholarship, President's Research Award ($7500)*

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 Engineer Fellow
- Deployed and managed **production-grade infrastructure** on a CentOS VPS, applying OS concepts like process isolation and virtual memory management through Docker, NGINX, and DNS routing.
- 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 with Dr. Florian Kerschbaum
- Constructed a protocol for **vertical federated learning** to securely train and serve fraud detection inference on distributed credit card time-series sequences.
- Trained **transformer models in PyTorch** and conducted large-scale HPO via Optuna to achieve a **95% F1 Score** despite an extreme 10000:1 class imbalance.
- Designed a **GAN-based framework** with Facebook's CrypTen for **encrypted multi-party computation**, enabling membership-inference-resistant cross-institution serving.

Jobeyze — Dec 2024 - Mar 2025
Software Engineer
- Spearheaded the development of an **automated web scraper** using Selenium and PHP 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) ⬈ | *React, PostgreSQL, Supabase, Python, GCP*
- Launched a trivia game with persistent game state and anonymous user tracking—**10k plays in 3 months**.
- Architected a Supabase backend with custom **PostgreSQL** functions to achieve **20ms read/write latency** on **30K queries** for real-time statistics tracking and rate control.

LifeOS (Hack the 6ix Winner) ⬈ | *React, FastAPI, Redis, Docker, Qdrant, Supabase, 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 peer-reviewed research paper in the **Journal of High School Science** under the supervision of Dr. Maria Konte.

SKILLS

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