William Shi

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website: williamshi.vercel.app

EDUCATION

University of Waterloo   Apr 2025 (expected)
Honours Bachelor of Computer Science   GPA: 3.71/4.00
Coursework: Machine Learning, Algorithms, Operating Systems, Compilers, Data Structures, Networks, Databases, Statistics

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SKILLS

Languages: C++, Python, JavaScript, TypeScript, Java, Rust, Dart, SQL, Bash, HTML, CSS
Technologies: React, Node, FastAPI, PyTorch, Spring, Flutter, MongoDB, PostgreSQL, Docker, k8s

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EXPERIENCE

Keplar.io   May 2024 - present
Machine Learning Engineer Intern   San Francisco, CA

- Incoming Summer 2024 intern building LLM agents for product development and customer simulation

Interac   Sep 2023 - Dec 2023
Software Engineer Intern   Toronto, ON

- Built **Python, GPT-4** app to detect compliance breaches in employee emails, decreasing false positives by **47%**
- Pioneered **Java, Spring, PostgreSQL** Open Banking API framework, enabling frictionless and secure data inter-operability for **millions** of consumers, businesses, and financial institutions across Canada
- Incorporated **Docker, Kubernetes** microservice architecture to scale network to **70+** financial institutions
- Implemented security model using **OAuth 2.0**, OIDC and encryption, for Financial-grade API certification

Interac   Jan 2023 - Apr 2023
Software Engineer Intern   Toronto, ON

- Led R&D of **NLP** toolkit, boosting developer velocity and advancing company OKR to leverage AI technology
- Created shared NLP cloud with **Python, Azure**, migrated existing projects to optimize operating costs by **20%**
- Simplified NLP model results for **50+** nontechnical employees by building web dashboards with **NextJS, Tailwind**
- Implemented data pipelines and parallelized AI model training with MongoDB, Docker, Kubernetes, to process over **10TB** of research paper data

WSIB Innovation Lab   May 2022 - Aug 2022
Software Engineer Intern   Waterloo, ON

- Led team of developers to revamp insurance service, saving **$1.5M** annually in claim processing costs
- Engineered mobile app stack with **Flutter, NodeJS, MongoDB** to automate **90%** of claim processes
- Incorporated API security with user authentication and authorization using **OAuth 2.0**
- Developed automated backend documentation using **OpenAPI** to streamline handoff to future developers

Paperminds AI (formerly Heka Health)   May 2021 - Aug 2021
Software Engineer Intern   Montreal, QC

- Launched web app for early-stage startup using **NextJS, PostgreSQL**, fast-tracking launch by **one month**
- Shipped end-to-end **MVP** features like Stripe payments, Google Maps integration, appointments, and Auth0 security
- Incorporated classical **NLP** techniques like tf-idf to accelerate SBERT embedding generation by **20%**

ACTIVITIES

BitNet: Implemented Microsoft's BitNet-b1.58 LLM whitepaper, involving quantization-aware pretraining techniques

ZKML: Undergrad Research Assistant. Implemented whitepapers and benchmark harnesses for ML zero-knowledge proofs

Urban Congestion Modeling: MacHacks 2022 winner. Tensorflow CNN predicting traffic congestion from birds-eye-view maps

Smart Contract Analyzer: ETHGlobal Waterloo winner. Generates sequence diagrams on Solidity programs

Network Membership Protocol: Distributed systems, implemented gossip protocol multicasting for eventual-consistency node lists