

Gavin Xue

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EDUCATION

University of Waterloo

Bachelor in Computer Science

GPA: 3.9

Sep 2023 – Present

- Awarded **1 of 10** René Descartes National Scholarships (**\$20,000**) from the Faculty of Mathematics
- Relevant courses: Data Structure and Algorithms, Operating Systems, Database Systems

EXPERIENCE

Shopify

Software Engineering Intern

Sep 2025 – Dec 2025

Toronto, ON

- Developed mission-critical checkout services supporting 2M+ merchants using **Ruby on Rails**, **GraphQL**, and **TypeScript**
- Designed client application layer to follow narrow-waist interface and factory method provider approach using **React** context, eliminating 7k+ lines of code and improving maintainability
- Reduced validation errors by 55% and latency by 20% by unifying **React** hooks and streamlining **GraphQL** logic

UW Blueprint

Software Developer

May 2025 – Present

Waterloo, ON

- Built reviewer allocation service using FSM round-robin algorithm in **Express.js**, reducing assignment time by 95%
- Designed backend infrastructure using **Firebase** Admin SDK with **JWT** authentication, implementing **GraphQL** resolvers and **PostgreSQL** database to manage 2,000+ applicant records per recruiting cycle
- Redesigned the database schema using **Sequelize ORM**, improving data integrity and query performance by 30%
- Created **CI/CD** pipeline with Github Actions for deploying the **Dockerized** service to the cloud

Environment and Climate Change Canada

Software Developer Intern

Jan 2025 – Apr 2025

Toronto, ON

- Launched climate forecasting product with 400+ monthly users, using **React** and **D3.js** for interactive data visualizations
- Built data processing pipeline with **pandas** and **Matplotlib**, automating generation of 1,000+ contour plots and structured JSON outputs for efficient client-side querying
- Refactored legacy code to follow **MVC architecture**, improving modularity and reducing the codebase by 500+ lines

Develop for Good

Software Developer

Oct 2024 – Feb 2025

Remote

- Built geospatial visualization platform with **Next.js**, showcasing 5,000+ locations with real-time, actionable insights
- Designed ETL pipeline unifying 3 data sources into **Supabase** database, using **Python** scripts and **GPT-4** to parse unstructured text with 99%+ accuracy across 50,000+ records
- Improved NLP/LLM-based data extraction using prompt optimization and fine-tuning, reducing processing time by 90%

PROJECTS

notefuse

| *Next.js, React, PostgreSQL, Redis, AWS S3, Pinecone, OpenAI*

- Built RAG-based PDF analysis chatbot using **Next.js** and **LangChain**, implementing document chunking and vector similarity search across embedded text within **Pinecone** vector database
- Designed secure file management system with **AWS S3** to ensure high availability
- Reduced database queries by 70%+ using **Redis** caching layer to store user sessions and frequently accessed data

Item Lending System



| *React, Express.js, Node.js, PostgreSQL, Cypress*

- Built full-stack lending management platform with **Express.js** and **PostgreSQL** database, implementing CRUD operations and transaction tracking for 300+ inventory items
- Created an automated testing suite with **Cypress**, achieving 90%+ end-to-end test coverage

TECHNICAL SKILLS

Languages: Python, JavaScript, TypeScript, C++, C, Java, Ruby, SQL, PHP, HTML, CSS, Bash

Technologies: React, Node.js, Express.js, Flask, Ruby on Rails, MongoDB, PostgreSQL, GraphQL, Redis, pandas, Matplotlib

Developer Tools: Docker, Kubernetes, Git, Linux, Jira, Selenium, Cypress, Jest, Playwright, AWS (Certified Cloud Practitioner)

