



# FELIX XIE

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## EDUCATION

### University of Waterloo

Bachelor's of Computer Science and Financial Management

Minor in Computational Mathematics

CFM Entrance Scholarship Recipient (\$4000)

Waterloo, CAN

Sept 2022 - April 2027

**3.9/4.0 GPA**

## SKILLS

Languages: Python, Java, JavaScript, TypeScript, C++, C, C#, R, SQL  
Frameworks/Tools: NodeJS, Flask, FastAPI, .NET, React, Angular, CMake, Boost  
Database: MySQL, Elasticsearch, MariaDB, MongoDB/NoSQL, Redis  
DevOps: Docker, K8s, Azure, AWS, GCP, Jenkins, Terraform, Linux

## EXPERIENCE

### Sparklease

Full Stack Developer - Core Product

Toronto, CAN

January 2024 - Current

- Designed and deployed a scalable C# **Redis cache microservice** and gzip compression middleware, cutting the average API response time from **1.5s to 0.3s** plus a **45% reduction in packet load**.
- Enhanced product functionality through continuous development of front-end features in HTML, CSS, and JavaScript, and successfully resolved **over 50 critical bugs** across mobile and web platforms.
- Engineered a payment gateway using ASP.NET Core MVC and Stripe, processing **\$30k/month**, complemented by an **analytics dashboard** to boost analysis and financial reporting efficiency.
- Spearheaded a **100% codebase migration** from .NET Core 2.0 to 6.0, improving performance and package compatibility.

### RBC

Software Engineer - Cloud Security

Toronto, CAN

May 2023 - August 2023

- Built and deployed a containerized **service update anomaly job** for Azure/AWS cloud services with Python using machine learning and web scraping, resulting in over **\$7000 saved** per service reviewed.
- Established **CI/CD pipelines** with Jenkins on AKS integrated with **10+ control tools**; configured **Kubernetes clusters** for security following internal DevSecOps standards.
- Implemented robust **Terraform IaC** for Azure AKS clusters, enabling optimized connections to external OpenAI instances and saving developer hours.

### RBC

Software Engineer - InnerSource

Toronto, CAN

July 2022 - August 2022

- Collaborated with 2 teams in an Agile environment to develop an internal application that allows **9000 RBC employees** to view and contribute to enterprise-level open source projects.
- Enhanced **UI/UX** via SCSS data themes and created **over 20 Angular components** using NgRx.
- Streamlined the implementation of a backend data pipeline by adding a **Elasticsearch engine web crawler** as FastAPI service - multithreading was used to reduce load times by up to **500%**.

## PROJECTS

### ConsciousDB C++, CMake, GTest

- Designed and implemented a robust C++ database management system from scratch, adhering to **OOP principles**, featuring dynamic memory formats for data persistence, and employing a **B+ Tree** data structure for efficient insert, delete, and node splitting operations.
- Developed a custom tokenizer/parser for query processing and ensured reliability through **comprehensive unit testing** using CMake and Google Test.

### ASCII Game Engine C++

- Architected a 2D game engine in C++, adhering to **MVC** architecture and **SOLID principles**; incorporated **advanced design patterns** for efficient core and object management.
- Features cross-platform console-based rendering, event-driven input, collision detection, dynamic world state with multi-layered rendering, and frame-based animation, all powered by ncurses.