

Yihan (Chrystal) Xie

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EDUCATION

Western University (UWO)

09/2024 - 08/2025

Master of Computer Engineering in Software Engineering

London, ON

Courses: Cloud Computing, Database Management, Machine Learning, Data Analytics, Introduction to Hacking

University of Toronto

09/2019 - 06/2024

Honors Bachelor of Science in Computer Science

Toronto, ON

Courses: Web Programming, Introduction to Software Engineering, Introduction to Database, Data Structures, Computer Network

SKILLS

Languages: Java, Python, HTML, XML, CSS, JavaScript, TypeScript, Kotlin, Go, SQL

Databases&Cloud: Git, Microservices, Docker, GCP, AWS, Azure, Kubernetes, Firebase, PostgreSQL, MySQL

Framework&Tools: React, Angular, Node.js, PySpark, jQuery, RESTful, Spring, Bootstrap, CI/CD, Agile, Linux

PROFESSIONAL EXPERIENCE

TD Bank

Toronto, ON

Business Insights & Analytics Co-op/Intern

01/2024 - 05/2024

- Built and maintained analytics solutions and Computer-Assisted Audit Tools and Techniques (CAATs) to support the Global Audit Division, enhancing audit efficiency and data-driven decision-making with multiple departments and cross-functional teams.
- Developed **Python** scripts using **Pandas** and **NumPy** to replace legacy systems like **ACL**, reducing audit processing time by 40% and ensuring timely access audits for **SQL Server** and **Oracle databases** under strict decommissioning deadlines.
- Built a data pipeline in Python to process and analyze HR datasets (5M+ rows) from **Alteryx**, improving data accuracy by 30% and enabling auditors to derive actionable insights; maintained clean, production-ready code with **Bitbucket** version control.
- Automated summarization of 200+ page PDFs with **Python (Summa, Sumy)**, cutting report prep time by 60%.

PROJECTS

MiniSpotify: A Full-stack Android music app

01/2025 - 05/2025

- Built a Spotify-inspired music app in Kotlin using **Android JetPack Library** and **Hilt Dependency Injection**, and integrated **Google ExoPlayer** for seamless global music playback control.
- Built BottomBar and in-App Navigation with **JetPack Navigation component**, reducing navigation errors by 30% in user testing.
- Built mock **RESTFUL API** (json-server) and handled network requests via **Retrofit**, enabling seamless API calls for endpoints.
- Implemented feed, album, and favourite UIs following **MVVM** architecture, and enabled local caching for the favourite feature using **Room** Database to ensure data integrity in offline mode.

FoodEase: A Spring Boot Based online food ordering System

12/2024 - 04/2025

- Built CRUD REST APIs with **Spring Boot** for core features such as registration, menu search, ordering, and checkout, and designed a responsive frontend using **React.js** and **MUI**, improving cart management efficiency in simulated order flows.
- Connected Spring Data **JDBC** to **PostgreSQL** database on **AWS RDS**, improving query performance for menu/restaurant by 45%.
- Secured the system using **Spring Security** and session-based authentication, blocking unauthorized access during penetration tests.
- Containerized and deployed on **AWS App Runner**, enabling auto-scaling to handle concurrent users in load testing.

GenPost: An AI-Powered Social Networking Web App

08/2024 - 12/2024

- Developed a full-stack social platform using a **React.js** frontend and **Go** backend, supporting real-time post creation and integrating the **OpenAI DALL·E 3 API** to enable users to generate and customize AI-assisted content.
- Enhanced authentication flow using **React Router v4** and **JWT**, reducing login failure 35% from the initial implementation.
- Deployed scalable Go web services on **Google App Engine**, maintaining 99.9% uptime during peak traffic.
- Leveraged **Elasticsearch** on **Google Compute Engine (GCE)** to deliver sub-50ms post searches, improving efficiency by 60%.

DocuChat: Full-Stack Web-Based Q&A AI Agent for PDF Document Queries

08/2024 - 12/2024

- Engineered an interactive conversational UI with **React.js** and **Ant Design**, allowing users to seamlessly upload, process, and interact with PDF documents in real-time through an intuitive and responsive web interface.
- Designed and optimized **RESTful APIs** using **Express** and **Node.js**, improving backend efficiency and reducing response latency by 35% through the implementation of embedding caching with a memory vector store.
- Integrated **OpenAI GPT-4o-mini API** and **LangChain** to develop an advanced AI agent capable of document parsing, semantic search, and generating dynamic, context-aware responses for user queries.