

Kevin Mao

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SKILLS

Languages: Java, C/C++, Python, JavaScript/TypeScript, Kotlin, SQL, HTML/CSS, MATLAB, VHDL, RISC-V
Frameworks/Libraries: React.js, Spring Boot, Tailwind CSS, Apache Struts, pandas, NumPy, Matplotlib, Tkinter
Tools: Docker, AWS, Azure DevOps, Git, Figma, OpenShift, Android Studio, Oracle Weblogic, STM32, Vercel

EXPERIENCE

Technical Analyst – Software Developer

May 2024 – August 2024

Ontario Ministry of Transportation (MTO)

Toronto, ON

- Addressed **50+** system vulnerabilities by upgrading **Java MVC** web applications using **Spring Boot** and **Struts**
- Enhanced site accessibility for **10,000+** monthly users, developing solutions to achieve **WCAG 2.1** compliance
- Reduced project onboarding time by **80%** by streamlining environment setup via **Docker** and **Azure DevOps**
- Built **CI/CD** pipelines via **Azure DevOps** within an **Agile Scrum** environment to test and deploy applications
- Integrated **Azure Key Vault** to centralize organization-wide application secret management and security

Firmware Developer

November 2023 – April 2024

UWaterloo Formula Electric

Waterloo, ON

- Developed **10+** hardware-in-the-loop (HIL) tests with **Python** to validate custom Battery Management firmware
- Designed and developed prototypes for **RTOS**-based vehicle dashboards using **Python (Tkinter)** and **LVGL**
- Diagnosed and resolved firmware bugs in **C** by analyzing code, schematics, and signal paths; mapped code logic to firmware inputs using **STM32**, **VirtualBox**, and **Vagrant**

Mobile Developer

October 2021 – May 2022

Game of Apps

Vancouver, BC

- Developed volunteering, bill-splitting, and resume generation apps using **Java** and **XML** in **Android Studio**
- Led end-to-end Android development, from initial wireframes and prototyping to final testing and deployment
- Increased user satisfaction by **25%** by incorporating insights from user interviews and real-world usability testing
- Employed **Sourcetree** for version control and **Figma** for **UI/UX** design in an **Agile Scrum** environment

PROJECTS

🔗 Admini | AWS, Python, TypeScript, HTML/CSS, React.js, Tailwind CSS, Figma, OpenShift, Jenkins

- Built a centralized contracting platform to streamline access to public and private-sector contracting opportunities
- Led front-end development using **React**, **TailwindCSS**, and **shadcn** to implement **UI/UX** designed in **Figma**
- Developed a **DynamoDB vector database** to store contract data collected by automated **Python** web scrapers
- Leveraging **AWS EC2** instances and **AWS Lambda** functions to support responsive and accurate data querying

🐍 Mapping Algorithm Comparison | Python, MySQL

- Developed a project to compare routing strategies across various mapping services, leveraging **Pandas**, **NumPy**, and **Matplotlib** for data analysis and visualization
- Cleaned and pre-processed geographic data from the Wikibase API, using **MySQL** for storage and management
- Fed prepared data into popular APIs such as Google Maps and Apple Maps to retrieve time and distance metrics
- Conducted statistical analysis on **100,000+ data points** to evaluate routing algorithm performance

🕒 PomoRise | C, Fusion360, STM32, Git

- Designed and implemented a 3D printed smart alarm clock and pomodoro productivity timer on an **STM32** MCU
- Developed **C** firmware with **I2C**, **SPI**, and **ADC** to control peripherals and generate alarm melodies using **PWM**
- Detailed requirements and process through a Project Proposal, Design Document, and Implementation Report

EDUCATION

University of Waterloo

Waterloo, ON

Bachelor of Applied Science in Computer Engineering (Honours)

September 2023 – Present

- 92% cGPA
- Relevant Courses: Data Structures & Algorithms, Programming (C++), Digital Computers, Digital Circuits