

Kevin Mao

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TECHNICAL SKILLS

Languages: C/C++, Java, Kotlin, JavaScript, React.js, Spring Boot, HTML/CSS, VHDL, Python, SQL, Assembly
Tools: Docker, AWS, Azure DevOps, MySQL, Git, Figma, RESTful APIs, Oracle Weblogic, STM32
Relevant Courses: Programming (C++), Algorithms and Data Structures, Digital Computers, Digital Circuits

EXPERIENCE

Technical Analyst – Software Developer

May 2024 - August 2024

Ontario Ministry of Transportation (MTO)

Toronto, ON

- Spearheaded the upgrade of multiple **Java MVC** applications built on **Spring Boot** and **Apache Struts**, addressing **50+** outstanding security vulnerabilities and enhancing code maintainability
- Utilized **CI/CD** pipelines via **Azure DevOps** and an Agile Scrum methodology to test and deploy applications
- Developed modular **HTML/CSS** and **JavaScript** solutions to achieve **WCAG 2.1** accessibility compliance
- Leveraged Azure DevOps to create a comprehensive Code Wiki for all applications, reducing average project onboarding and setup time by **80%** and enhancing documentation clarity, navigation, and accessibility
- Created a POC prompting a company-wide shift to **Azure Key Vault** for secure storage of secret properties

Firmware Developer

November 2023 – April 2024

UWaterloo Formula Electric

Waterloo, ON

- Developed hardware-in-the-loop (HIL) tests with **Python** to validate custom Battery Management Unit firmware
- Debugged firmware in **C** by analyzing code, schematics, and signal paths to identify key variables and functions
- Used **STM32**, **VirtualBox**, and **Vagrant** for mapping correlation between code logic and firmware inputs
- Designed and developed POCs for an **RTOS**-based vehicle dashboard using **Python (Tkinter)** and **LVGL**

Mobile Developer

October 2021 – May 2022

Game of Apps

Vancouver, BC

- Developed volunteering, bill-splitting, and resume generation apps within **Android Studio** using **Java** and **XML**
- Employed **Sourcetree** for version control and **Figma** for **UI/UX** design in an Agile Scrum environment
- Led the full Android development lifecycle, from design and development to testing, analysis, and deployment

PROJECTS

🔗 Admini | *AWS, OpenShift, JavaScript, React.js, HTML/CSS, Figma*

- Created a centralized government contracting platform, securing **\$10,000 funding** and partnership with AECOM
- Spearheaded front-end design and development efforts using **Figma** and **React** with an **AWS Lambda** API layer
- Developed and populated an **EC2 vector database** using web scrapers and built an **OAuth2.0** user login system
- Utilized **Jenkins** and **ArgoCD** within **OpenShift (Kubernetes)** to build automated CI/CD pipelines

🔗 Mapping Algorithm Comparison | *Python, pandas, NumPy, Matplotlib, MySQL*

- Developed a project to compare routing strategies across various mapping services, leveraging **Python (pandas, NumPy, Matplotlib)** for data manipulation and analysis
- Collected and pre-processed geographic data from the Wikibase **RESTful API** and routing data from popular mapping APIs including Google and Apple Maps, utilizing a **MySQL** database for storage and management
- Applied statistical analysis to identify trends, variations, and outliers in routing data, providing insights into the performance of each mapping service

🔗 PomoRise | *C, Fusion360, STM32, Git*

- Designed and implemented a 3D printed smart alarm clock and productivity timer on an **STM32** Microcontroller
- Developed **C** firmware with **I2C**, **SPI**, and **ADC** to interface with peripherals and generate melodies via **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