

Hossein Molavi

hmolavi@uwaterloo.ca
hmolavi.com
linkedin/in/hmolavi

Skills

Languages: C++, C, Python, Swift, Bash, Verilog, Shell, Java, Ruby, JavaScript, TypeScript, SQL

Frameworks/Libraries: Django, SwiftUI, Rails, VueJS, ReactJS, Flask, NodeJS, WordPress, OpenCV

Tools: Git, Linux OS, Xcode, Eclipse, Jira, GitHub Actions, Postman, MongoDB, ROS, FreeRTOS

Experience

Software Engineering Intern

Cambridge, ON

Miltera Research Corp.

Winter 2024

- Released 3 networking packages in Swift, enhancing API integration across multiple data sources
- Automated and streamlined company's CRM using the 3 networking packages, improving access time by 30%
- Implemented advanced Object Oriented Programming (OOP) & Protocol Oriented Programming (POP) designs
- Achieved 98% test coverage by writing comprehensive unit, integration, and end-to-end tests via XCTest
- Consolidated daily run script programs by rewriting Ruby code into Swift, resulting in an all-in-one iOS app

Embedded Systems Programmer

Waterloo, ON

Midnight Sun

Fall 2023

- Contributed to the MSXV project, which launched in the [American Solar Car Challenge](#) in Summer 2024
- Enhanced thread synchronization by employing API blocking techniques and kernel scheduling in C
- Ensured stable integration by developing real-time device drivers using FreeRTOS
- Designed and implemented Finite State Machines, improving system reliability
- Improved project tracking and collaboration by managing tasks on Jira and sharing documents on Confluence

Full-Stack Engineering Intern

Peterborough, ON

Lifestyle Home Products

Fall 2022

- Deployed and maintained Django applications, enhancing the backend functionality of new company website
- Improved backend performance by employing Locust workers for stress and performance testing
- Employed Redis with Celery brokers to schedule background tasks for special event sales emails
- Simplified internal analytics retrieval with a new RESTful API backed UI
- Reduced Google Ads spend by 15% (~\$200K) by optimizing the campaign and removing low-performing words

Research Assistant Intern

Toronto, ON

Princess Margaret Hospital, Genomic Labs

Winter 2022

- Reduced sample processing time by 400% by implementing data streamlines on HPC clusters
- Increased system uptime by 10% by writing Python scripts to halt bad datasets before pipelines
- Facilitated genomic data analysis by developing command line tools for easy querying
- Advanced cancer prevention research by utilizing modern Hi-C techniques with HiC-ProV3 under the supervision of Dr. Elias Orouji

Projects

Toyota Computer Vision Challenge 🏆 Winner

- Awarded the top prize out of 300+ candidates for achieving the fastest challenge completion time
- Developed a C++ program using Orbbeo Astra SDK to track Toyota cars and their wheels
- Achieved millimeter accuracy in capturing images of cars crossing the designated post

Real Time Fire Alarm (RTFA) 🏆

- Enhanced fire safety by developing a reliable and efficient alarm system using FreeRTOS in C
- Improved emergency response through concurrent task implementation and multiple alarm mechanisms
- Increased alert effectiveness with emergency text messages (UART port), flashing lights, and LCD display
- Achieved precise fire detection by integrating an IR sensor with the STM32 Nucleo board

Education

University of Waterloo

Bachelor of Computer Engineering

Waterloo, ON

2021 - Anticipated 04/2026