

Hossein Molavi

hmolavi@uwaterloo.ca | (226) 978 2824 | Waterloo ON | hmolavi.com | [linkedin.com/in/hmolavi](https://www.linkedin.com/in/hmolavi)

Highlights of Qualifications

- ❖ 3rd year Computer Engineering student with 6 years of low-level programming experience with **C** and **C++**
- ❖ Expertise in Python developed over internships and numerous personal projects
- ❖ Strong foundations in Operating Systems and the Linux Kernel
- ❖ Completed and achieved Django and Python certificates from CodeWithMosh
- ❖ Completing 100 days of Swift from HackingWithSwift
- ❖ Solved 200+ problems on LeetCode, beating 84% of platform; ranked as high as top 20% in contests
- ❖ 2-time Hackathon Champion in Toyota Innovation Challenge and GoodHack24 featured on news article
- ❖ 2-time percipient of outstanding employer rating, report1, report2

Education

University of Waterloo

Bachelor of Computer Engineering, Coop
Term average of 82.4, GPA of 3.8

Waterloo, ON

2021 - Present

Relevant Courses: Compilers (C), Real Time Operating Systems (C), Algorithms & Data Structures (C++), Embedded Microprocessor Systems (C), Systems & Concurrency (C), Numerical Methods (C)

Experience

Miltera Research Corp.

Digital System Developer Intern

Cambridge, ON

Winter 2024

- Contributed to 3 networking Swift packages, enhancing API integration across multiple data sources
- Automated and streamlined the company's CRM and integrating new method within internal iOS app
- Engineered new iOS app that leverages the networking packages, improving data access efficiency by 30%
- Wrote tests and created documentation for all new instances of production code

Tools: Swift, SwiftUI, Ruby on Rails, Xcode, Git

Lifestyle Home Products

Marketing Assistant Intern

Peterborough, ON

Fall 2022

- Developed company website, JBROntario.ca, projecting to generate 900+ leads value at \$850k annually
- Optimized Google Ads campaign by removing low performing keywords, reducing spend by 15% (~\$200K)
- Designed database schema and defined the relationship between tables for transition to new CRM
- Simplified internal analytics retrieval process with new API backed UI

Tools: Django, Django REST Framework, Python, MySQL, DataGrip, JavaScript

Princess Margaret Hospital

Research Assistant Intern

Toronto, ON

Winter 2021

- Implemented data streamlines on supercomputer, reducing sample process time by 400%
- Wrote Python scripts to detect & delete bad datasets before reaching pipelines, reducing uptime by 10%
- Developed tools granting easy access for querying genomic datasets

Tools: Python, Shell, Bash, HiC-ProV3

Midnight Sun

Embedded Systems Programmer

Waterloo, ON
Aug 2023 - Dec 2023

- Worked on MSXV, launched in the American Solar Car Challenge in Summer 2024
- Developed real-time device drivers using RTOS while ensuring stable integration
- Utilized API blocking techniques to sync communication between threads

Tools: C, RTOS, OS, Git, Jira, Confluence, GDB

Competitions

Toyota Computer Vision Challenge

- Was awarded the top prize out of 300+ candidates by achieving fastest challenge completion time
- Developed a program which tracks Toyota cars using C++ and Orbbec Astra SDK
- Completed the challenge by taking a picture of car once crossed the indicated post

Toyota Fleet Control Challenge

- Only group to complete all stages of the challenge, recognized for use of AI models for efficient mapping
- Extended TMMC Python wrapper to allow for complex logic while using ROS2 for Gazebo simulations
- Engineered a scalable solution for autonomous and independent robots using Python

ChronoCraft – HawkHacks Hackathon

- Developed an innovative timeline creation software for visualizing and analyzing chronological data
- Implemented comprehensive database schema with MongoDB Atlas, NodeJS and Neurelo
- Features a seamless UI with TimelineJS and NextJS framework
- Integrated AI for data summarization and filtering, enhancing user experience

Featured Projects

Ultimate Gym Bro

- Devised a personalized fitness chatbot using Python and the LangChain library
- Utilized a LLM agent and Steamship for seamless conversation management
- Launched on [Telegram](#)

Online Store

- Designed a backend system for an online store with Django
- Developed and designed full database schema with MySQL
- Created more than 15 REST API endpoints for different applications
- Optimized query calls, leading to scalable and extensible services

Firefighter Robot

- Designed an autonomous robot that searches for and extinguishes flame
- Created using PIC microcontrollers, custom PCBs and CAD software
- Enhanced the wall tracking algorithm with 3 IR sensors using GreatCowBasic

Smart Door Lock

- Leveraged facial recognition using OpenCV to achieve secure access control in Python
- Achieved high accuracy in face recognition with Deepface, permission given only to referenced faces
- Connected an Arduino via Serial COM ports to control a stepper motor for unlocking and locking the door