

# Yazan Masoud

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## EDUCATION

### University of Waterloo

*Bachelor of Applied Science in Biomedical Engineering*

Waterloo, ON

Sept. 2020 – April 2025

## EXPERIENCE

### Embedded Software Contractor

*smartARM*

March 2023 – Present

Toronto, ON

- Designing and developing upper-limb prostheses controls system and EMG signal processing code in Python

### Software Development Engineer

*Infinera Canada Inc.*

Sept 2022 – December 2022

Ottawa, ON

- Designed and implemented CLI API in C++ to configure Digital Sub-Carrier Groups via CRUD operations
- Instrumented SDK for heap memory and CPU profiling using gperftools; visualized with pprof and KCachegrind
- Wrote C++ unit test suite for encryption bypass/passthrough mode on chip initialization using doctest
- Enabled port forwarding via IP tables to enable Docker container runtime to communicate with custom MCU

### Software Developer

*Thomson Reuters*

Jan 2022 – Apr 2022

Toronto, ON

- Prototyped OpenTelemetry integration for generating and collecting distributed traces for application performance and behavior analysis
- Identified and fixed SQL injection vulnerabilities in .NET Core codebase using Veracode and SonarQube
- Wrote unit tests in C# to increase Legal Tracker test coverage for legacy code by 8%

### Software Engineer

*Cox Automotive Inc.*

May 2021 – Sept 2021

Mississauga, ON

- Developed user stories in agile environment with ASP.NET Core and C# for car dealership applications
- Implemented UI updates with Angular, modernizing the DealerTrack platform and ensuring AODA compliance
- Configured backend email automation for customer financing inquiries

### Full Stack Developer

*Halton District School Board*

Sept 2019 – Feb 2020

Burlington, ON

- Developed web application to audit third-party app access of school staff G-Suite accounts
- Built a production-ready web app using JavaScript, HTML, CSS, and SQL from a Node.js prototype leveraging Google's Directory API
- Deployed by the Halton District School Board, monitoring 6246+ staff and replacing the manual report system

## PROJECTS

### Brain Wave Gaming & SSVEP Communication

Jan 2023 – Feb 2023

- Architected EEG Brain-Computer Interface to play Flappy Bird with brain wave control system
- Built verbal communication system with steady state visually evoked potentials and OpenAI text completion API
- Designed and constructed analog circuit to amplify/filter brain waves in the 8-32Hz range
- Used Python to process signals on Raspberry Pi, apply digital filters and FFTs, visualize data, and build interfaces

### Naruto Hand Sign Classifier

Mar 2022 – June 2022

- Led the design of a computer vision pipeline for hand gesture classification using transfer learning
- Leveraged OpenCV in Python to curate dataset, localize and crop hand positions, and make real-time predictions
- Achieved 93.60% test accuracy and 83.33% live demo accuracy with VGG16

## SKILLS

**Languages:** Python, C/C++, C#, SQL, JavaScript, TypeScript, HTML/CSS, Bash

**Frameworks:** React, Angular, Node.js, ASP.NET, .NET Core

**Tools:** Git, Docker, Unity, Jenkins, Linux, Xilinx Evaluation Boards, Zync SoC (Arm-Cortex A53)

**Libraries:** pandas, NumPy, Matplotlib, TensorFlow, Keras, OpenCV, eRPC/gRPC