

Murtadha Saeed Nisyif

Computer Engineering Undergraduate

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Summary

- Highly accomplished and motivated engineer with a strong background in Robotics and Information Technology.
- Demonstrated expertise in leading successful accessibility projects and proposing innovative system architectures.
- Lead developer in real-time projects, including a Text-to-Braille Real-Time Converter and a real-time security system.
- Winner of design competitions, earning \$2,000 prize for an image processor automating medical tests readouts.

Education

University of Guelph

Masters of Engineering

Sep 2023 – Aug 2025

Guelph, Ontario

University of Guelph

Bachelor of Engineering: Major in Computer Engineering, Minor in Computer Science

Sep 2019 – May 2023

Guelph, Ontario

Relevant Work Experience

Undergraduate Research Assistant

University of Guelph - Robotics Institute

May 2023 – Present

Guelph, Ontario

- Staged an accessibility project funded by NSERC to production and installed it at Collingwood's public facilities
- Designed and proposed ROS2 system architecture for an assistive feeding robot for individuals with special needs

R&D Software developer - Work Study

University of Guelph - Robotics Institute

Oct 2022 – May 2023

Guelph, Ontario

- Implemented multi-level data pipeline between depth cameras and FANUC arm achieving a modular operational system
- Took tasks to switch to ROS from python based robotics system, to reduce complexity and improve operation stability

Information Technology Analyst

Kitchener Downtown Community Health Center - SRHC

Jul 2020 – Oct 2020

Kitchener, Ontario

- Devised a call scheduling scheme to cut down patients' call waiting times by 30%
- Saved 45% of a \$10,000 budget by implementing self-devised equipment upgrade plan using cost-saving initiatives

Projects

Dynamic noise cancelling with RL | [Python](#), [PyTorch](#)

Oct 2023

- Implemented a Reinforcement Learning and Dynamic Sparse Training-based voice noise cancellation solution, adapting the Automatic Noise Filtering algorithm for real-time application and achieving significant improvements in system accuracy and adaptability in varied noise environments.

Text-to-Braille Real-Time Converter | [Python](#), [Git](#), [Eagle](#), [Jira](#)

Apr 2023

- Lead a group of 4 and coordinated with a NPO to design a novel solution that converts text-to-braille in real time while maintaining a challenging building cost of \$250 CAD

Program Counter CMOS-Based Integrated Circuit | [Cadence](#), [Jira](#), [Linux](#)

Jan 2023

- Applied concepts such as fanout, and delay calculations to develop an optimized CMOS based program counter following a hierarchical design and validated functionality by using industry grade simulation tools

Real-Time Security System | [STM32](#), [FreeRTOS](#), [uC-OS III](#)

Nov 2022

- Built a real-time security system using a STM32f429 development board, a FHD camera and a PIR motion sensor by utilizing real-time systems concepts such as semaphores and interrupts to deliver a system with response times of 50 ms

ZAMAZ UTI Diagnosis - Image Processor | [Python](#), [NumPy](#), [SciPy](#), [Matplotlib](#)

Apr 2022

- Developed and integrated a software system to automate bar volumetric readouts of urine sample tests by analyzing a captured image of the readout and performing pixel calculations to calculate the concentrations of bacteria. This system is 16 times faster than the current gold standard, and as a result, my team won a prize of \$2,000 in a design competition among 50+ groups

Plagism detection software | [Java](#), [Git](#)

Mar 2019

- Designed and developed an plagism detector that utilized Jaccard index to compare documents and papers

Skills

Languages: C/C++/C#, Python, JavaScript, Java, HTML, MATLAB, VHDL, CSS

Frameworks: Node.js, React.js, Express.js, NumPy, ROS(1 & 2), Pandas, Tensorflow, Django, FreeRTOS

Tools: Git, Docker, GCC, CMake, Xilinx, Quartus IV, Cadence Virtuoso, MLFlow

Databases: MongoDB, MySQL, SQLite