

M. Swaleh Owais

SOFTWARE DEVELOPER · MECHANICAL ENGINEER · PRECISION MACHINIST

Canadian Citizen - Toronto ON - Eligible for TN Visa

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Experience

Autodesk

San Francisco, CA

ADAPTIVE ROBOTICS RESEARCH INTERN

May 2020 - August 2020

- Worked as a robotics research intern at the Autodesk AI Lab, in the Office of the CTO.
- Built cross-platform Python and C++ tools for simulating adaptive robots (UR10, Kuka KR 60, PANDA).

Innovative Automation Inc.

Barrie, ON

CONTROLS ENGINEERING INTERN

May 2019 - August 2019

- Wrote PLC ladder logic for a robotic trim cell that manufactures components for the 2019 Toyota Highlander (Fanuc M-20iA robots, Beckhoff PLC, TwinCAT 2).
- Developed an interactive [tic-tac-toe playing robot exhibit](#) (Python, OpenCV, UR10e).

McMaster University

Hamilton, ON

EDUCATIONAL SOFTWARE DEVELOPER CO-OP

May 2017 - August 2017

- Fulfilled the role of a full stack software developer.
- Independently designed, built, and launched [CADGrader: a web application that automates the grading of CAD assignments](#).
- Front End - Electron, React, JQuery, Three.js; Back End - NumPy, MySQL, PHP, Node.js.
- Presented at [PyCon Canada 2018](#). Available at <http://cadgrader.eng.mcmaster.ca/> (McMaster VPN Only).

CENG Technologies

Hamilton, ON

SOFTWARE DEVELOPMENT CONTRACTOR • PART TIME

August 2020 - Present

- Building software/hardware solutions for remotely controlling airline operational systems.
- Architecting cloud architecture for building IoT systems.
- Designing and assembly PCBs for an IoT box that monitors temperature and humidity levels.

McMaster Learning Factory (Industry 4.0 Research Lab)

Hamilton, ON

ROBOTICS RESEARCH ASSISTANT • PART TIME

December 2018 - April 2020

- Investigated flexible manufacturing techniques by developing a [3D printer machine tending cell](#).
- Designed and built a ceramic 3D printer.

Skills

Software Python ♥, JavaScript ♥, Electron ♥, Node.js, Matlab, PHP, SQL, C/C++, PLC programming
Mechanical Autodesk Inventor ♥, SolidWorks, Precision Machining (Lathe+Mill), 3D Printing ♥, Rapid Prototyping
Hardware Arduino ♥, Raspberry Pi ♥, Particle

Technical Projects

Autonomous Infinite 3D Printer (2018 Hackaday Prize Finalist)

PYTHON, JS, 3D PRINTING, ARDUINO, CAD, LATHE+MILL

- Independently designed, built, and programmed a [3D printer that automatically ejects print jobs \(400,000+ Views\)](#).
- Wrote a [desktop application that manages the 3D printer's print jobs](#), using Electron and PySerial.
- Machine can [print infinitely](#) in y-axis.

OTHER PROJECTS

- Built and programmed a [3D printer machine tending cell](#).
- Wrote a desktop application that [allows users to send SMS via eye blinks](#). The application was built with PyQt and OpenCV.
- Built a [CNC plotter from garbage](#) (Grand Prize Winner of Instructables® Contest).

Education

McMaster University

Hamilton, ON

B.ENG. IN MECHANICAL ENGINEERING AND CO-OP

2016 - Exp. 2021

Teaching Assistant for COMPSCI 1MD3 | Teaching Assistant for ENG 1C03 | Research Assistant for Dr. Elizabeth Hassan (PhD MechEng) | Instructional Assistant for the MacPherson Institute | Lab Technician for Campus 3D Printing Lab