

# M. Swaleh Owais

SOFTWARE DEVELOPER · MECHANICAL ENGINEER · AVID 3D PRINTER DESIGNER  
Canadian Citizen - Eligible for TN Visa - Currently reside in Toronto ON  
🏠 www.swal.me | 📺 SwalehOwais | 📞 Call Me Swal

I have extensive experience working in both academic and corporate research labs. Moreover, I routinely design 3D printers and 3D printing software applications. Here is an example of a popular 3D printer that I designed: [https://youtu.be/E\\_RvnqVHbnA](https://youtu.be/E_RvnqVHbnA). In my free time, I complete freelance work in fields like IoT, automation, and robotics.

## Experience

### Autodesk

San Francisco, CA

ADAPTIVE ROBOTICS RESEARCH INTERN

May 2020 - August 2020

- Worked as a 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).
- Designed fixtures and mounting brackets for industrial robots, using Autodesk Inventor.
- Developed a demonstration of a dual flexible manufacturing cell that produces wooden palettes.

### 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).
- Developed an interactive [tic-tac-toe playing robot exhibit](#) (OpenCV, UR10e).

### McMaster University

Hamilton, ON

EDUCATIONAL SOFTWARE DEVELOPER CO-OP

May 2017 - Aug. 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, JQuery, Three.js; Back End - NumPy, MySQL, PHP, WAMP. Presented CADGrader at [PyCon Canada 2018](#).

### 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 IoT systems.
- Designing and assembling PCBs for an IoT box that monitors temperature and humidity levels.

## 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](#). 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

September 2016 - Exp. April 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