



# JACOB FOSTER

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## Education

### McMaster University, Hamilton, ON

Sep. 2022 - May 2027

*Bachelor of Mechatronics Engineering*

GPA - 3.9

- Accolades: Faculty of Engineering Award of Excellence Scholarship 2022, Dean's Honours List 2022-2024.
- Involvement: McMaster SumoBot 2024 Group Champion, Deltahacks X, McMaster CAD Designathon Unified Engineering Challenge 4th Place, Google Developer Student Club Member.

### Assumption Catholic Secondary School, Burlington, ON

Sep. 2018 - May 2022

GPA - 96.5%

- Accolades: Honour Role: 2018-2022, Class Ranking 7/226.
- Involvement: FIRST Robotics, REACH for the Top Trivia Team, Alpine Snowboard Team Captain, Alpine Ski Team Racer, Investment Club.

## Experience

### L3Harris Technologies - Wescam Division

May 2024 - August 2024

*Manufacturing Engineering Co-op*

Waterdown, ON

- Developed a software/firmware comparison tool to capture current and previous build components of a WESCAM imaging device and automatically determine build status for repairs, decreasing effective labour time from 20 mins to 1 min. Built using C#, .NET Framework, HTML.
- Automated several test processes using C# to load, save, and unload calibration values onto devices and into test directories.
- Implemented an improved tooling management system for a lab of 100+ manufacturing technicians using housing assemblies designed in SOLIDWORKS.

### Decathlon

December 2021 - April 2024

*Sales Associate*

Burlington, ON

- Responsible for online sales management and verification, maintaining and ordering inventory, and providing knowledgeable and proactive customer service.

## Projects

### AllergyPal | Python, Tensorflow, HTML, CSS, Javascript, Flask

September 2024

- Designed a website that allows users input a list of dietary restrictions and use machine learning to detect potential hazards in their food.
- Trained a machine learning model to detect over 100 different dishes based on an image taken by the user in the site.
- Utilized the ChatGPT 4.0 API to retrieve common ingredients and food risks present in any given dish, which was then cross referenced with a user's dietary restrictions.
- Created a REST API using Flask and Python to call upon the image recognition model in real time upon a user's request.

### Spinnick SumoBot | Arduino, C++, Autodesk Inventor, Embedded Systems, Soldering

January 2024

- Engineered and automated battle robot capable of perceiving environment features, attacking opponents, and evading attacks.
- Developed C++ control algorithms for attack and evasion based on various sensor readings.
- Assembled the bot's control mechanism using an Arduino micro-controller, ultrasonic and colour sensors, and DC motors.
- CAD designed and printed the bot's body using Autodesk Inventor.

### OnTime – Student Scheduling Aid | Python, Google Cloud Console

December 2023

- Developed an automatic bot using Python and Google Cloud Console to notify myself of optimal time of departure for lectures based on real time traffic data.
- Utilized Google Maps and Google Calendar API to collect traffic data and calculate commute duration based on current position and location of lectures.
- Created a Twilio platform to send SMS messages to a user to ensure timely departure.

## Technical Skills

**Computing:** Python, C, C++, C#, HTML, CSS, Javascript, Tailwind, React.js, MATLAB

**Developer Tools:** Git, GitHub, .NET, VS Code, Visual Studio, JetBrains IDE, Node.js

**Technologies:** SOLIDWORKS, Autodesk Inventor, LaTeX, Adobe CC, Microsoft Office

**Manufacturing:** Soldering, 3D printing, Drill press, Hand and power tools