

# Matthew Belanger

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## Education

### University of Windsor

Windsor, ON Canada

BACHELOR'S DEGREE IN **COMPUTER SCIENCE** AS A **SOFTWARE ENGINEERING SPECIALIST** WITH A MINOR IN **MATHEMATICS**.

Sept. 2018 - April 2022

- Graduated with Distinction.
- Recipient of the Deans Renewable Entrance **scholarship** given to graduating students who show **strong academic performance**.
- Recipient of the SHSM **scholarship** for receiving the **ICT-SHSM** seal on my **OSSD** after meeting the requirements from the Ministry of Education.

## Work Experience

### C++ R&D Engineer

Windsor, ON CANADA

TESSONICS INC.

Jan. 2022 - Present

- **C++ Engineer** for the Real Time Integrated Weld Analyzer or RIWA, a **multi-threaded, network** enabled product that is **synchronized** with 3rd party manufacturing **hardware/software** components to produce real time feedback on weld quality for the user.
- Some notable contributions include **implementation** of various **communication protocols** for 3rd party devices which involved direct collaboration with partner companies, implementation of **theoretical ultrasonic interpretation algorithms** discovered by company researchers, and the implementation of **AI** models all while ensuring sub-millisecond turnaround times.
- Used **Git** for team based development which includes reviewing **pull requests**, resolving **merge conflicts** among more **GitHub** features.

### Teaching Assistant

Windsor, ON CANADA

SCHOOL OF COMPUTER SCIENCE, UNIVERSITY OF WINDSOR

Aug. 2019 - April 2022

- Responsible for communicating the abstract steps of **problem solving** in an intuitive manner to students and grading coursework accurately.

## Competitions and Conferences

### WinHacks

Windsor, ON Canada

PARTICIPANT

September 2020

- Created the Smile Finder **Web App** that detects when the user is smiling using the **ImageAI Python API**.
- Smile Finder implements the **Flask** framework for **Python** to host the **Web App**.
- Smile Finder utilizes the **OpenCV Python API** for **computer vision** and displays the live video feed on a **web-page**.

### Google DevFest 2022

Windsor, ON Canada

PARTICIPANT

November 2022

- Interacted with **Google Cloud** and **3D Modelling** demos while learning about **Accessibility Testing** and **Modern Security** concerns.

## Independent Projects

### Discord Bot Host

July 2020

JAVA WEB-SOCKET APPLICATION WHERE THE USER UPLOADS THEIR OWN DISCORD BOT AND HOST IT ON A DEDICATED MACHINE.

- **Client** application implements **JAVA Swing** for an intuitive **GUI**.
- **Server** application uses **multi-threading** to allow for multiple bots to be hosted at once.
- **Server** application will **host** the bot automatically once it is received by the **client** application.

### Spotify App

April 2020

JAVA APPLICATION THAT MODIFIES USERS SPOTIFY PLAYLISTS AND QUEUE.

- Implements the **Spotify Web Client API for JAVA** to give the user a quick and easy way to add songs to their queue.
- Input is prompted by an instinctive terminal interface for a quick and simple user experience.
- Utilizes an **automated authentication** process for quick access to the the main functionality of the program.

### Bipartite Graph Generator and Detector

Nov. 2021

C PROGRAMS THAT CAN GENERATE AND DETERMINE IF A **GRAPH** IS **BIPARTITE** EFFICIENTLY.

- These programs apply **Graph Theoretic Principles** and a **DFS** to scan for/avoid **odd cycles** to satisfy the odd cycle property of **bipartite graphs**.

## Skills

**Programming:** C++, JAVA, Python, C, Scheme, Racket, LaTeX, Bash, FLEX, CUP

**Build Tools:** CMake, Ninja, Conan, Bushido

**Website Development:** HTML, CSS, JavaScript, PHP, SQL, REST API