Danielle Fong

(647) 213-1310
daniellefong13@gmail.com
www.linkedin.com/in/danielle-fong

EDUCATION

Bachelor of Engineering (Electrical Engineering), McMaster University September 2020 - Present

- **GPA:** 9.2/12.0 (equivalent to 3.4/4.0)

PROJECTS

VBook for Hack the North

- Created a speech-to-text bot for Facebook Messenger that allows users to send text messages solely with their voice
- Front end was designed using **JavaScript**, **NodeJS, React** and the back end was built in **Python** using Facebook Messenger API and IBM Watson
- Learned how to code in **JavaScript, HTML, CSS** during the workshops and utilized these skills to create and design a website, experimenting with **UI/UX** page formatting and **debugging** code

Robotic Crane

- Created a joystick controlled robotic crane to carry blocks from point A to B, built with two micro servo motors to control the rotation and height of the crane
- **Breadboarded** the joystick and micro servo motors to an **Arduino** and developed functions to control the crane through the **microcontroller** using a variation of **C++**
- Adjusted the pivot to increase distance by 25% and maximize rotation to 180°, improving the flexibility of the crane
- **Stress tested** the stability of the crane using counterweights to withstand the weight of the motors, ensuring that the crane was securely balanced on the pivot of the base tower

Sterilization Container

- Designed a sterilization container for surgical tools to be carried and placed into an autoclave by a robotic arm
- The robotic arm was connected through a **Raspberry Pi** and coded in **Python** to control the robotic arm's movement
- The sterilization container was **CAD** modelled using **Autodesk Inventor** and 3D printed
- 10+ drawings and models were created and different aspects from the various container designs were tested and combined to create the most efficient and compatible container for sterilization and transportation

Traffic Lights Simulator

- Designed a traffic light simulation and circuited the schematic on a virtual **PCB** using the **Fritzing EDA** tool
- Used **IC chips** to implement timing which created flashing patterns for each LED
- Adjusted the timing by testing different capacitor and resistor values to replicate a traffic light intersection
- Utilized knowledge of **logic gates** to learn about IC chips in order to determine the connection between **electric components** and each pin, **debugging** and reformatting wiring patterns to create the most effective circuit layout

VOLUNTEER & LEADERSHIP EXPERIENCE

Public Relations Committee Member, IEEE McMaster Branch — November 2020 - Present
Music Team Lead Guitarist, AFC Teens Conference — October 2017 - March 2020
Executive Chairman, Markville True Vine Christian Fellowship — September 2017 - June 2020
Assistant Softball Coach, Chinese Christian Softball Association — May 2019 - August 2019

AWARDS & ACHIEVEMENTS

Lieutenant Governor's Community Volunteer Award for contributing the most volunteer hours in their community 2020
Consecutive Honours Student for maintaining an average above 80% for four consecutive years 2017, 2018, 2019, 2020