Connor Jong

Mechatronics Engineering Student

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WORK EXPERIENCE

R&D Mechatronics Engineering Intern
Lincoln Electric Canada

05/2019 - 08/2020

Achievements/Tasks

- Developed, debugged, and unit tested a ladder logic based PLC program for GUI of 2 prototype welding units
- Developed, debugged, and unit tested C/C++ source code for embedded controllers of 2 engine-driven welder prototypes
- Modified and integrated various communication channels into embedded systems including **CAN** bus and **UART**
- Worked with the Project Manager to develop a proprietary algorithm that improved the efficiency and stability of welding arc resulting in a significantly smoother welding experience
- Led a four-week project conducting performance tests on a **$25,000** prototype and making necessary design changes to acquire **IP23** and **CSA** certifications
- Designed and modified the electrical and mechanical systems for 2 engine-driven welder prototypes
- Developed standard testing documentation and procedures for a **$25,000** product and participated in assembly supervision to oversee successful testing

PCB Manufacturing Engineering Co-op
Circuit Tech Inc

05/2018 - 08/2018

Achievements/Tasks

- Utilized 6 Sigma and 5S methodologies to improve quality control guidelines and production efficiency by **25%**
- Assisted Circuit Tech Inc. in acquiring military-grade certification on their PCBs via the implementation of new quality control guidelines
- Assisted on several PCB design projects per day in the multilayer lamination pressing department including military level projects

EDUCATION

Candidate for Bachelor of Applied Science, Mechatronics Engineering
University of Ontario Institute of Technology

09/2016 - Present *Most Recent Semester's GPA: 4.15/4.3*

TECHNICAL SKILLS

C/C++ | Python | Java | ROS | OpenCV | SLAM | Linux | MATLAB | SAP | Git | Unity

PROJECTS

Unmanned Aerial Vehicle for Structural Firefighting [Team Leader] (02/2020 - Present)

- Designed and modified electrical and mechanical systems of the UAV, including the frame and power management system
- Was responsible for researching and identifying necessary components for UAV, including processing system and sensors
- Utilized AirSim, Unreal Engine, and Gazebo for conducting software simulations for the UAV
- Currently implementing open-source **Simultaneous Localization and Mapping** software for autonomous navigation and 3D map generation using **ROS**
- Currently developing autonomous frontier based 3D exploration algorithm for UAV using **ROS**

Autonomous Package Retrieval Robot [Team] (09/2020 - 12/2020)

- Implemented an overhead tracking system to localize the robot and identify packages using Python, **OpenCV**, and an ArUco marker
- Developed a custom path planning algorithm to determine the optimal route to complete tasks while simultaneously avoiding obstacles using Python
- Integrated Bluetooth serial communication between base station and robot using Python and Arduino
- Programmed Arduino based embedded controller to control gripper, motors, and navigation of robot

EXTRACURRICULARS

Code Life Ventilator Challenge (03/2020 - 04/2020)

Worked as a team to design a low-cost, easy-to-use and easy-to-build ventilator that can serve the COVID-19 patients, in an emergency timeframe

University Mars Rover Design Team (07/2018 - 04/2019)

University design team, tasked with developing an autonomous rover for the University Rover Challenge and the Canadian International Rover Challenge

Intramural Basketball Captain (01/2017 - 04/2020)

Intramural Basketball Captain for 3+ years, making 3 intramural basketball final appearances and winning 1 intramural basketball championship

Junior Achievement [Sponsored by Deloitte] (10/2015 - 04/2016)

Worked in a start-up environment and developed a baby-sitting service app under the mentorship of Deloitte Executives. ***Won most innovative company of the year****.*

SOFT SKILLS

Leadership | Problem Solving | Quick-learner | Project Management