Joshua Ching

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Experience

Co-Op Student | Department of National Defence

May 2022 - Aug 2022

- Designed an automated reception system via drone to receive and direct guests in an office
- Created, using Power BI, an interface to administer and organize a stakeholder management database

Software Development Intern | Geotab

Sep 2021 - Dec 2021

- Enhanced Kubernetes cluster stability by creating a function that notifies whenever a cluster node or control plane is being upgraded
- Created a server and deployer to make online predictions on premade machine learning models such as scikit-learn, Tensorflow, and Keras

Innovation Program Manager | Department of National Defence

Jan 2021 - Apr 2021

- Aided in the testing of SmartShape, a digital twin visualization software
- Programmed using Python and machine learning for an OpenBCI headset to interpret EEG signals
- Authored a report on sewage treatment innovations in Canadian ships

Projects

Technical Captain | uOttawa Bionics

Sep 2019 - May 2023

- Contributed to the technical progress and gave counsel to the development of a four-degree of freedom (DOF) hip-mounted exoskeleton for rehabilitation utilizing SolidWorks and mechanical design
- Designed and manufactured the electrical subassembly of the exoskeleton and a suit stand for showcasing
- Managed the design, prototyping, and testing of a myoelectric arm, leveraging composite materials for improved performance

AutoScribe

Sep 2019 - Dec 2019

- Developed a whiteboard writer that translates whiteboard drawings to a desktop image on an application via strings and encoders
- Used Python to interpret encoder rotation as polar coordinates
- Designed marker sleeve to attach to strings and string spooling device to keep in constant tension

Education

BASc in Biomedical Mechanical Engineering and BSc in Computing Technology
University of Ottawa
2018 - Anticipated 2023
6th year, 3.7 GPA

Awards

2019, 2020 | Dean's Merit Scholarship

uOttawa Engineering Competition:

2020 | Senior Design 1st Place

2019 | Junior Design 1st Place

Tools

Languages

English

French (Working language)

Mandarin (Comprehension)

Mechanical

CAD (SolidWorks, AutoCAD, Fusion 360, Rhino), FEA, CFD, Mechanical Design

MATLAB/Simulink, Maple, Quartus, ANSYS, STAR-CCM+

Biomedical

Electromyography, Brain-Computer Interfaces, Biomechanics

Electrical

Microcontrollers, PCB Design, System Design, Sensor Interfacing

Software

Java, Python, C, C++, Go, JavaScript

Microsoft Office Suite, LaTeX, Git, Agile