CONNOR SEQUEIRA

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EDUCATION

EXPECTED IN 2028

BACHELOR OF APPLIED SCIENCE

MECHATRONICS ENGINEERING | UNIVERSITY OF WATERLOO | WATERLOO, ON

SKILLS

- C++
- PYTHON
- 3D VISION SYSTEMS
- SOLIDWORKS
- MS EXCEL
- FEA

EXPERIENCE

ENGINEERING ANALYST

A BERGER PRECISION | BRAMPTON, ON SEP 2024 - DEC 2024

- **3D Design & Prototyping**: Designed detailed 3D models in SolidWorks and created functional prototypes using 3D printing, improving tool life and reducing downtime by 87%.
- **Robotics Programming**: Developed and debugged programs for ur5e arm in pick-and-place application, optimizing cycle time from 21.3s to 6.7s.
- **Machine Vision & AI**: Constructed logic for Mech-Mind camera systems and integrated machine learning algorithms to enhance functionality, resulting in a 60% reduction in part mispicks during operation.
- **Industrial Automation**: Designed and implemented PLC logic for palletizing and vision inspection system, adjusting sensors, limit switches, and system parameters reducing mechanical system fault occurrence by 95%. Created base code and flow charts for future AI system integration.

ENGINEERING ASSISTANT

ARMACELL CANADA INC. | BRAMPTON, ON JAN 2024 - APR 2024

- **Designed printer mount using SOLIDWORKS** for product traceability that meets operating and safety demands
- **Created 3 different Standard Operating Procedures** using Excel to create standard for newly added machinery
- **Created cost/benefit analysis, risk assessment, and project report** using calculated and gathered data to propose solution to leaking blender machines
- **Improved communication** between team members by maintaining accurate project documentation, including reports, schedules, and specifications.

- MACHINE LEARNING
- ROBOT PROGRAMMING
- MACHINE VISION
- EOAT
- ROOT CAUSE ANALYSIS
- S5

ROCKETRY TEAM MEMBER

WATERLOO ROCKETRY | WATERLOO, ON MAY 2024 - SEP 2024

- **Contributed Python code** to automate testing of rocket aerodynamics simulations to eliminate the need for human oversight during the process
- **Updated legacy python code** for an automated notification system that ties into slack to notify team members of important information
- **Assisted in project management** for successful completion of various team assignments.

PROJECTS

PrecisionMOTION

- Constructed a functioning **prosthetic hand** to mimic inputs from the user
- Used **SOLIDWORKS** and **3D printing technology** to fabricate a model of the parts of the hand in order to be assembled
- Created a high precision program using **C++** to control the hand using an **Arduino**
- Utilized and adjusted **flex sensors** and **servo motors** appropriately in order to create accurate recreations of movements

Automatic Lathe

- Constructed a fully functioning **lathe** that carves a user made profile into material with a high degree of accuracy and repeatability
- Used **SOLIDWORKS** and **3D printing technology** to fabricate a model of the parts of the spindle and assembly
- Created an original line tracking algorithm in **C++** that tells the lathe to follow a user made profile
- Implemented crucial **Safety features**

"Josh" the Virtual Assistant

- Developed functional virtual assistant using Python, leveraging preexisting code, packages, functions, and libraries.
- Integrated separate components to construct a functional virtual assistant.
- Personalized voice recognition by adapting reference code, enhancing data collection accuracy.
- Implemented reference code to output voice responses to user.
- Engineered a customized command list and coded user-initiated commands, tailoring the experience.
- Committed to ongoing improvement; currently exploring the integration of AI and machine learning elements like ChatGPT for future versions.