Neal Elharidy

nealelharidy@icloud.com | +1 416-835-3589 | Portfolio | LinkedIn

EDUCATION: University of British Columbia - **Systems and Signals Engineer** - Expected Graduation April 2024

PROFESSIONAL EXPERIENCE:

Soapstand LLC - Systems and Assembly Engineer Aug 2022 - Sep 2023

Soapstand develops product refill stations allowing businesses to grow sustainably while reducing plastic waste.

- Improved weekly production from 6 to 10 machines by streamlining the PCB and integrated circuit fabrication and testing.
- Configured and tested system's firmware, addressed bugs and provided detailed reports to the development team (C/C++).
- Developed system for QC logging and testing for assembled machines using python while following ISO 9001 standards.
- Trained new assembly technicians on processes, documented assembly instructions, and supervised QA.

UBC Envision - Green Joule Executive Lead July 2021 - April 2022

Green Joule is a UBC Envision subsidiary focusing on production of renewable biofuel from algae lipid extraction.

- Oversaw and organized wet lab research and production as well as finances amongst 4 subdivisions totalling 30 members.
- Programmed full monitoring and control system using C++ for controlling gas flow, PIC based temperature control, light intensity and fermentation rate.
- Coordinated with the School of Chemical and Biological Engineering, the School of Botany, and the BIOT design team on deploying a unified biofuel reactor to utilize carbon emission for renewable brewing.

UBC Envision - Green Joule Growth Subdivision Lead Sept 2020 - July 2021

- Increased annual yield of biofuel by 12% via implementing a modified Folch technique for lipid extraction.
- Decreased cost per litre by 30% by utilizing local cultures growth mediums collected from UBC grounds.
- Designed and developed a method of producing alcohol and biofuel in a unified bioreactor that was later deployed with fellow design team BIOT to allow carbon negative brewing.

Stem Fellowship National Undergraduate Big Data Challenge - Team Engineer June 2021 - July 2021

- Collaborated with three colleagues to research an implement of machine learning using TensorFlow to predict the spread of information on COVID-19 via social media.
- Developed an algorithm in Python that analyzes the social impact and accuracy of social media posts and reports an information accuracy score.

Biz-Hacks - Hackathon Team Engineer Feb 2020

BizHacks is an independent organization that hosts engineering hackathons focused on solving real-life business issues.

- Designed in Fusion 360, and later 3D printed a functional automated product booth for Best Buy Canada.
- Programmed a robust software stack solution using Python for backend development, MySQL for database management, and HTML, CSS, and JavaScript for frontend functionality.

PROJECTS

- **Photonic Electro-Optic Modulator Chip** - Designed, manufactured and tested a photonic integrated circuit with the aim of exploring methods of increasing efficiency in photonic switches.
- **3D Retinal Scans using OCT Imaging** - Programmed in Matlab a method of generating a manipulatable 3D volume of retinal scans from raw optical computer tomography data.
- **Custom Firmware for Ender 3D-Printer** - Wrote custom firmware for Ender3V2-Neo platform in C/C++ that adds a multitude of new features to printer and ensures excellent print quality.
- **LLaMa 13B based research assistant** - Programmed and fine-tuned a research assistant in Python using ANE-Transformers, and Meta's open-source LLaMa model.

VOLUNTEERING

Hamad Medical Co. - Facilities Volunteer Feb 2021 - June 2021

Hamad Medical Co. is Qatar's comprehensive public health system that provides high-quality care through its hospitals and research institutes.

- Received vaccine thermal shippers containing 5000 vaccines each, forwarded batches to storage and medical personnel.
- Generated reports regarding medical supplies to be restocked, thermal shippers received, and daily vaccines used.
- Assisted in general administration and system IT issues by debugging mySQL database system.

Carnegie Mellon University - MindCraft Project Volunteer April 2017 - May 2018

- Built and maintained the line tracking robots used by participants using Arduinos programmed in C++ for controllers.
- Programmed cryptography based challenges for participants in Python.
- Counselled and monitored participants throughout the program ensuring the teams maintained cohesion.