Alexander Hay

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Education

Northwestern University — Evanston, IL
M.S. Robotics — 2020

Iowa State University — Ames, IA
B.S. Mechanical Engineering — 2014

Skillset

Python, JS/HTML/CSS, MATLab, C/C++, Git, CMake, ROS, Linux, Windows, Onshape, Solidworks, AutoCAD, Inventor

Experience

Naxos Lab LLC - Montreal, QC — Mar 2022 - Jan 2023
Lead Engineer

- Responsible for design and fabrication of novel laboratory and educational devices
- Utilized 3D printing for rapid prototyping and development
- Created manufacturing roadmap to scale with business
- Implemented chain of visibility, traceability, and accountability
- Mentored CEO through the business creation process
- Liaised with Canadian and US universities to develop product

Universite de Montreal - Montreal, QC — Apr 2021 - Feb 2022
Lab Manager - Research Associate

- Rehabilitated NHP for reintroduction into laboratory environment
- Maintained, calibrated, and tested advanced laboratory equipment
- Designed, characterized, and documented novel scientific instruments
- Facilitated laboratory activities, managed inventory and procurement
- Coordinated with university engineering, maintenance, and veterinary personnel
- Synchronized communications, schedules, and automated tasks and reporting
- Supported onboarding and safety training

Northwestern University - Chicago, IL — Aug 2019 - Dec 2020
Graduate Student

- Lead development of an MRI-compatible tactile stimulation device
- Built a neural network using gradient descent to generate a motion model for a roomba
- Programmed industrial robot to find, grab, aim, and fire a NERF gun
- Visualized neuron communication using quantitative analysis
- Emulated muscle actuation using shape-memory alloys

Pearce Services - Des Moines, IA — Apr 2016 - Aug 2019
Design Engineer

- Facilitated telecom infrastructure plans for major metro ISPs and carriers
- Scope of projects ranged from small businesses to residential communities
- Budgeted construction and labor costs, dispatching engineers on site when necessary