Danny Faryna

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3B Mechatronics Engineering – University of Waterloo dafaryna@uwaterloo.ca, (519) 404-5690

TECHNICAL SKILLS

Design Experience

- Machine Design
- Sheet Metal
- Motor Sizing
- Material Selection
- DFM/DFA
- Rapid Prototyping
- Excel Calculations
- Concept Design
- FDM/SLS/SLA 3DP
- Pneumatics
- Part Sourcing
- Tolerance Analysis
- Sensor Integration
- SolidWorks Analysis

CAD

- SolidWorks – 7 Years
- Drawing Production/GD&T
- OnShape

Machining

- CNC Mill/Router
- Manual Mill/Lathe
- Part Reworking

Hardware/Code

- Component Soldering
- Machine/Circuit Wiring
- PCB Design
- Arduino
- Oscilloscope Debugging
- C++/C, Python, Java familiarity

WORK EXPERIENCE

Mechanical Designer *Mycionics Inc.* Jan 2021 – Apr 2021, Sept 2021 – Dec 2021

- Designed a 3-DOF mushroom box transferring system which replaces full boxes of mushrooms with new empty boxes. This allowed the mushroom packing robot to run autonomously for 4 hours
- Researched, designed, and tested 8 different mushroom gripper finger concepts, each design was evaluated on the farm for performance and documented for future gripper design iterations
- Designed a mushroom stem collection system using a trap door mechanism feeding into a moving bin
- Designed a sheet metal sensor enclosure for monitoring CO_2 and humidity of the mushroom beds

Mechanical Engineering Technologist *Stern Laboratories* May 2020 – Aug 2020

- Assembled and tested an underwater CANDU fuel bundle manipulator with over 80 unique parts
- Prototyped, designed, and tested a 3D printed proof of concept wire feeding and cutting device which will be used for CANDU reactor irradiated waste disposal
- Reworked and machined parts within ± 0.002” tolerance using a manual mill and lathe

Hardware R&D Engineering *SannTek Labs* Sept 2019 - Dec 2019

- Made the first iteration of a portable THC extractor from initial concept to working device that could extract 80% of THC particles out of a filter into a detectable solution
- Designed and built a cartridge-based system that would allow quick connect and disconnect of filters between breath capture and THC extraction devices
- Designed, built, and tested the next iteration of a breathalyzer which was lighter, easier to use, rugged, and aesthetically pleasing. This device was brought to field demos and shown to investors
- Supported the science team with multiple custom lab fixtures and manufacturing of consumable items

Automation Designer *Stackpole International* Jan 2019 - Apr 2019

- Prototyped and designed a clamping mechanism to secure products during robotic assembly while staying within a 7 second station cycle time
- Designed various feeder weldments, sheet metal funnels and robot calibration tools in SolidWorks

EXTRACURRICULARS

FIRST Robotics *Celt-X FRC 5406 – Mentor, Team DAVE FRC 3683 - Student* Jan 2013 - Present

- Led the engineering process of serval competitive robotics subsystems such as a 7” dodge ball turreted shooter, kick ball conveyor system, robot lifting linkage with winch, sheet metal drive trains and a single jointed ball intake/lifting arm from prototype to competition ready
- Taught high school students how to properly design, machine, wire, and assemble mechanisms
- Crucial part of the drive team and pit crew for 6 years, driving the robot during competition and keeping the robot operational in a fast-paced, high-pressure environment
- First Robotics Competition world championship finalist (2019) and semi finalist (2017) out of 450 teams