Gurshan Deol

Website: shawn-deol.github.io
E-mail: gs2deol@uwaterloo.ca

QUALIFICATIONS

- Extremely proficient in the use of SolidWorks
- Advanced proficiency in using and troubleshooting 3D printers and lasercutters
- Proficient in C, C++, GCODE and Python
- Capable of using MATLAB and LabVIEW for testing purposes
- Able to design hardware systems using development platforms such as Arduino and Raspberry Pi
- Experienced in the use of lab testing equipment (oscilloscopes, various transducers, etc)

WORK EXPERIENCE

Voxel8, Cambridge, MA — Summer 2016
Hardware Intern

- Designed pneumatic and mechanical fixtures to automatically clean excess material from nozzle tips that was $300 cheaper than alternative solutions
- Designed and programmed a system to allow for the control of through-spindle air pressure in a HAAS CNC using solenoid valves and pneumatic regulators
- Designed various mechanical fixtures in SolidWorks to improve manufacturing throughput
- Became highly proficient in rapid manufacturing technologies such as 3D Printing and laser-cutting

Ophardt Hygiene R&D, Beamsville, ON — Fall 2015
Product Engineering Intern

- Created a liquid level measuring device for bioreactors that was $200 cheaper than alternatives
- Designed both plastic and steel Solidworks components for use in testing rigs
- Designed and constructed the pilot version of a new pneumatic testing rig; using a modular valve manifold the new rig will be $5000 cheaper than the previous set-up
- Conducted motor efficiency testing to compare competitor products
- Performed cost estimation and generate bill of materials (BOM) for project assemblies

VASPAC, Hamilton, ON — Winter 2015
Systems Engineer Intern

- Developed scripts to display PLC data such as temperature and pressure using VB.NET
- Designed the operating console U/I in VB.NET, RSView32 and Archestra
- Translated electrical and mechanical drawings into easily readable electronics versions
- Simulated standard PLC operation using Matrikon OPC

EDUCATION

University of Waterloo — Class of 2018
Mechanical Engineering, Option in Biomechanics

- Specialzied option in Engineering Biomechanics
- Worked on projects in robotics and PLC programming with classmates
- Learned the use of specialized software such as Adams, MATLAB and RSView32

PROJECTS

Portable Raspberry Pi Gaming Console

- Designed and fabricated a portable Raspberry Pi gaming console from scratch using spare parts
- Fully designed and modeled all components in SolidWorks and 3D Printed the buttons and enclosure
- Programmed an Arduino Micro as an HID game controller which allows for user input to the Pi

Delta-robot 3D Printer

- Designing and currently constructing a delta robot style 3D printer based off the Kossel Mini
- The magnetic ball-socket effector head, arms and v-slot carriage were entirely designed by me while much of the frame was based off an existing printer

Entirely 3D Printed Human Input Device

- Designed and fabricated an entirely 3D printed Human Input Device using the Voxel8 printer
- The metamaterial device uses thermoplastic 2D springs to close circuits created from silver ink
- The device uses an embedded Arduino Micro to communicate as a HID and supports 12 buttons
- The device is proof of concept that shows how a Voxel8 printer can create custom HIDs at a low cost