Saksham Malhotra

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Education:
B.A.Sc in Mechatronics Engineering (Honours & Co-Op) | 2021 | University of Waterloo

EXPERIENCE

Mechanical Engineering Assistant, *Smarter Alloys* *Jan 2020 – April 2020*

- Designed and developed miniature thermal actuators for clients using shape memory alloys (NiTi)
- Conducted controlled experiments using laser processing and thermal treatments to analyzing the transformation behaviour of shape memory materials
- Designed mechanical fixtures using Fusion 360, along with electrical control boxes, for in-house lasers to increase their efficiency and safety

Manufacturing Engineering Intern, *Formlabs* *May 2019 – Aug 2019*

- Used SolidWorks to design, prototype and build multiple jigs to test laser safety by collecting light transmission data for customer facing parts of the Form 3 printer
- Validated laser safety testing jigs by conducting a Gage R&R study to establish a baseline for instrument and operator variation
- Organized and managed the in-depth quality control initiative for the first 300 customer-ready Form 3 printers during production ramp
- Worked with contract manufacturers by providing feedback from the quality control effort resulting in an 80% increase in first pass yield of the Form 3 printers

Instrument Engineer, *Nicoya Lifesciences* *Oct 2018 – Dec 2018*

- Transitioned the OpenSPR medical instrument from the development to manufacturing stage by creating detailed work instructions and a bill of materials
- Decreased manufacturing time of the OpenSPR by 60% by improving tolerances of the assembly design features
- Developed a comprehensive production schedule to provide accurate delivery times for new customers based on supplier lead times
- Optimized the manufacturing space and process flow resulting in a 200% increase in production

Mechatronics Engineering Intern, *AXIS Inc.* *July 2017 – Aug 2017*

- Modeled a test jig in SolidWorks before building and wiring it to measure output current from a solar panel under various lighting conditions
- Tested and repaired various electronic components including a capacitive touch sensor and the main control board for the AXIS Gear

PROJECTS

Smart Knee Brace for Osteoarthritis, *University of Waterloo* *July 2020 – April 2021*

- Creating a smart unloader knee brace prototype to relieve pain for patients suffering from multicompartmental and unicompartmental Osteoarthritis
- Designed the brace in SolidWorks and built a functional prototype using aluminum sheet metal, custom 3D printed components, a spring and cable system, IMU sensors and motor system.
- Adopted a Kanban style of project management to manage the team and build the brace with minimal resources and budget during the COVID-19 pandemic

Security Camera (Stewart Platform), *University of Waterloo* *Sep 2019 – Dec 2019*

- Modelled (MATLAB) and designed (SolidWorks) a security camera system built upon the foundation and principles of a Stewart Platform

TOOLS

SolidWorks
Fusion 360
AutoCAD
MATLAB
ePDM
Asana
Atlassian (Jira/Confluence)
Amazon AWS
MySQL, Microsoft SQL

MECHANICAL SKILLS

Mechanical Design
SLA & FDM 3D Printing
Machining
Laser Cutting
Laser Processing
Soldering

LANGUAGES

C++, Java, Python
Linux, Bash Scripting

RELEVANT ACADEMIC COURSE/EXPERIENCE

MEMS Fabrication
Digital Control Application
Fluid Dynamics & Fluid Power Systems
Thermodynamics
Electromechanical Machine Design

INTERESTS

Ultimate Frisbee
Basketball
Ukulele & Piano