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Johnny Li

ABOUT

Mechatronics engineer with 3 years of work experience in mechanical design and prototyping using SolidWorks, experimental testing and hands-on work. I am interested in work related to mechanical design, robotics and software development. I can relocate if necessary.

EDUCATION

University of British Columbia

Bachelor of Applied Science
Mechanical Engineering
(Mechatronics Option)
Sept, 2011 – Apr, 2016

TECHNICAL SKILLS

Mechanical:
SolidWorks, PDM
Power and Hand Tools
Machining, Milling, Turning
Materials Testing
Composite Lay-up

Design
Rapid Prototyping
Design for Assembly
DFMA
Engineering Design Process
New Product Development

Electrical:
Oscilloscope
Multi-meter
Soldering, Crimping

Programming:
C, C++, C#, Python
MS Visual Studio, Atom
Embedded Systems
MATLAB, Simulink

WORK EXPERIENCE

Avestec Technologies Inc. Mechanical Engineer, Vancouver BC **Nov 2020 – Current**

- Designed new propeller guard and landing frame bracket following DFMA by reducing the total number of fasteners used by 80% and reduced platform setup time from 10 minutes to 2 minutes.
- Prototyped and optimized new battery powered quadcopter platform to maximize flight time while carrying current payloads used for UAV inspections
- Improved robotic delta arm design to allow for full range of motion of servomotors while maintaining stability of the arm, adequate transducer coupling and modularity with existing platforms
- Designed new end effector linkage used for surface cleaning to clean the entire area of transducer measurements to improve reading accuracy and coupling ability
- Redesigned 3D printed parts using carbon fibre sheets for mass manufacturing
- Rapid prototyped the form and function of concepts with 3D printing

Andian Technologies Ltd. Hardware Engineer EIT. Burnaby, BC **Apr 2017 – Oct 2019**

- Designed and modified machined and welded components in track gauge measurement system to with narrow gauge tracks in the railway industry while maintaining compatibility with sensors in previous designs
- Analyzed current measurement system and reduced the weight of the mechanism by 10% to decrease physical strength required by users to operate
- Designed and manufactured a prototype enclosure using sheet metal and welds to position laser profiling sensors used for rail profiling to provide quick setup and storage of profiling equipment following ANSI and FDA standards
- Implemented new internal part numbering scheme using SolidWorks PDM to keep revisions of part designs and improve traceability of parts and BOMs for manufacturing
- Machined custom parts using the milling machine and fabricated parts for low-volume production and prototypes
- Made wiring harnesses, soldering surface mount components (MCU chips, capacitors, resistors, etc), rebuilt and greased mechanical components

TECHNICAL PROJECTS

Autonomous Air Hockey Player **Mar 2016**

- Worked as a group of two to design an autonomous robot player to play defense by moving the mallet to defend its goal
- Designed mechanical hardware for holding the hockey mallet and integrating with miniature air hockey table
- Programmed the motor controller and tuned a PI controller to produce a smooth and fast response
- Developed a method to accept commands from computer vision C# interface and convert to physical motion