Clayton Bagnall

437 Magnolia Crescent, London, N5Y4T2 | bagnalcj@mcmaster.ca | (519) 854-7137 | http://cbagnall.github.io/

EDUCATION

Bachelor of Engineering – Mechatronics Co-op
McMaster University

- Entrance Scholarship
- Dean's Honor Roll (3.5 Cumulative GPA)
- Expected date of completion: May 2018

WORK EXPERIENCE

Engineering Summer Intern **June 2012 – Sept 2015**
Robarts Research Inst., London, Ontario

- Designed an electro-mechanical MRI-compatible motion stage prototype to calibrate for motion artifacts. Learned how to approach open-ended problems with no previously-existing solution.
- Designed a mechanical apparatus for mounting tissue in predetermined orientations. Orientations were based on a software coordinate transform algorithm I studied to convert from CT image space to real space.
- Designed a prototype for an optically-based sensing device. Device was part of a team project for research into current medical procedures.
- Optimized circuitry and developed control algorithm for new medical device. Helped analyze and interpret data with LabView during development and initial testing phases. Device is currently in testing.

TECHNICAL SKILLS

Software Skills

- Solidworks / AutoCAD
- Java
- Python
- C / C++
- Linux scripting

Mechanical Skills

- Modelling / drafting
- Finite Element Analysis
- Machine shop experience
- Transmission/gearing
- Vehicular mechanics

Electrical Skills

- Soldering
- Sensor implementation
- EagleCAD / Altium PCB design
- Servo motor control
- ARM based Microcontrollers

QUALIFICATIONS

- Able to effectively communicate using technical terminology
- Able to function effectively with other team members to meet deadlines
- Four years of experience researching, designing, developing, and testing electro-mechanical systems
- Machine shop experience using drill press, lathe, mill, etc.
- Extensive use and knowledge of rapid prototyping techniques and 3D printer systems
- Time management skills and a solid understanding of the entire engineering design process

PROJECTS/HOBBIES

The "Sandy" Project **Sept. – Dec. 2013**

- Successfully constructed device to aid rheumatoid arthritis patient (Sandy) pump gasoline more efficiently

Sumobot competition **Dec. 2014 – Feb. 2015**

- Designed the chassis, circuitry and attack/drive algorithms for an Arduino-based autonomous fighting robot.

Microcontrollers **Sept 2013 – Present**

- In my spare time I enjoy working with various microcontrollers (Arduino, Beagle Bone STM32F4 Discovery)

Quadcopter Simulations **July 2014 – Present**

- I am currently learning how to run simulations on a quadcopter I designed in Solidworks with Matlab Simulink