Trevor McCourt

Candidate for BASc, Honors Mechanical Engineering

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60 Glen Davis Crs, Toronto, Ontario, Canada, M4E1X5

SKILLS AND QUALIFICATIONS

- Expert in SolidWorks and AutoCAD developed through design team work
- Proficient in Java, C++, and SQL, familiar with HTML, CSS, MATLAB and Simulink
- Expert in Excel, including the manipulation of csv files and mathematical analysis of experimental data
- Excellent technical troubleshooting and problem solving skills
- Experienced in 3D Printing and laser cutting via Waterloo Aerial Robotics Group projects
- Highly organized with time management skills developed through continuous teamwork. Can excel in either a team or individual environment
- Experience working with composites, specifically moulding

PROFESSIONAL EXPERIENCE

Waterloo Aerial Robotics Group

Waterloo, Ontario

September 2015- Present

Mechanical Design Team Lead

- Used SolidWorks to design and manufacture a brushless gimbal to interface with pre-existing components on an autonomous aircraft; gimbal will be used during Unmanned Systems Canada competition this year
- Calculated physical limitations of gimbal to optimize performance
- Took over camera stabilization systems as a team lead at the beginning of second term
- Working to create a 3D assembly of the current aircraft for systems integration purposes
- Developing node.js based ground station application for smooth UAV control
- Beginning work on VTOL aircraft development

Toronto Transit Commission

Toronto, Ontario

May 2016- September 2016

Signals Engineer

- Upcoming Co-Op job, working with team to develop new modern signaling infrastructure for the Toronto subway network
- Focus on CAD and drafting for manufacturing

EDUCATION

University of Waterloo

Waterloo, Ontario

September 2015- Present

Candidate For Bachelor of Applied Science, Honors, Mechanical Engineering

Academically ranked 9th/211

PERSONAL PROJECTS

Bicycle Restoration

- Bought 1989 Norco Monterey in disrepair and rebuilt the bike to its original state using solely original parts

High Speed Hybrid Aircraft

- Ongoing design and manufacturing of a helium based hybrid aircraft theoretically capable of reaching 50 km/h
- Experienced working with quadcopter components
- Performed material and structural analysis

Movie Database Search Engine

- Designed and coded program using Java to take filenames and interface with online open source API which returned details about movies
- Stored and manipulated results via csv files in Microsoft Excel
- Prioritized search to take key search terms from user

Custom Multi-Rotor

- Handpicked and assembled components to make up a fully autonomous quadcopter
- Handmade wires, soldered joints
- Implemented FPV system for an immersive flying experience

Li-Fi Transceiver

- Developed software to be used on embedded systems to facilitate the transfer of data over the visible light spectrum
- Experienced cross platform interaction- Java C interface
- Successfully transmitted 85% of an image over visual light

Injection Molder Redesign

- Redesigned an injection molding machine for a corporation to compensate for a large amount of error in the molding process
- Modeled all custom components in SolidWorks
- Evaluated thermal and structural properties of materials

PERSONAL ACHIEVEMENTS

- Bronze Medal, 3 years in a row, University of Toronto Metro Toronto Science Fair
- Strong in academic competitions (top 5% SIN physics exam, top 6% Avagadro chemistry exam, etc)
- Silver Medal Overall, University of Toronto Space Design Competition
- Silver Medal, OFSSA Archery
- Top First Year Cadet, 330 Squadron, Royal Canadian Air Cadets

INTERESTS

- Road Cycling
- Bicycle Mechanics
- Electronics, especially custom PCs
- Trumpet
- Archery, recreational hockey
- Air Cadets
- Aviation, Aerodynamics, and anything that pertains to things that fly
- Pick up hockey and baseball