Nick Speal

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Objective

A full-time systems engineering management position in the robotics industry
Targeting the San Francisco Bay Area

Education

McGill University (Montreal, Canada) 2009-2014
Bachelor of Mechanical Engineering
Louis C. Ho Scholarship & Dean's Honour List
CGPA: 3.9/4.0

Leadership

Founder and Project Manager, McGill Robotics 2011-2014

- Supervised 98 members across Mechanical, Software, Electrical, and Business divisions
- Planned yearly design cycles, from concept to deployment, of an autonomous underwater vehicle and a lunar excavator
- Raised and allocated $90,000 of cash and in-kind donations from sponsors
- Manufactured numerous parts on the lathe, mill, and other machine tools
- International competition results: 1st in branding, 3rd in design & presentation, 10th overall out of 39 teams at RoboSub 2014. 12th out of 50 at NASA in 2013

Academic Projects

Propulsion and Control System for an Autonomous Underwater Vehicle

- Implemented a 5-DOF control system in C++ and ROS
- Established and iterated upon interface requirements using Agile design principles

Braille University: iOS Application

- Built an iOS app that leverages external hardware to help blind users learn braille
- Conducted usability tests to study human-computer interaction

Research Experience

McGill Aerospace Mechatronics Lab Summer 2013
Prof. Inna Sharf & Prof. Meyer Nahon

- Designed and conducted experiments on a quadrotor aircraft to facilitate autonomous takeoff and landing
- Published work on thruster performance characteristics at very low altitudes in the 2014 International Conference on Unmanned Aircraft Systems
- Studied a variety of sensors for altitude measurement, with a focus on LiDAR

McGill Shockwave Physics Group Summer 2012
Prof. Andrew Higgins

- Independently developed a granular dynamics physics simulator in MATLAB
- Collaborated to perform detonation experiments and source components for a Photon Doppler Velocimeter for hypervelocity measurements

McGill Structural Dynamics and Vibrations Lab Summer 2011
Prof. Christophe Pierre

- Created a Graphical User Interface in Python for turbomachinery simulations

Software Skills

MATLAB, Python, C/C++, Objective-C, LaTeX
ROS, Unix, GitHub, Agile Development, Excel, AutoDesk Inventor