

# Nick Speal

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461 Park Ave  
Rye, NY 10580

[www.speal.ca](http://www.speal.ca)

(415) 699-0273  
[Nick@Speal.ca](mailto:Nick@Speal.ca)

**Objective** I am a US Citizen, looking for a full time systems or software engineering position in robotics or another high-tech industry. I am targeting the San Francisco Bay Area, but am flexible.

**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,  $\text{\LaTeX}$   
ROS, Unix, GitHub, Agile Development, Excel, AutoDesk Inventor