# Michael Elliot King

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## Education

2009 - 2014 **B.Eng., Mechanical Engineering**
*McGill University* – Montreal, Quebec

## Experience

9/2014 - Present **Mechanical Engineer II** ⤳
*Charles River Analytics* – Wakefield, Rhode Island

- Designed, tested, and implemented a submersible pneumatic and electrical system for urgent surfacing maneuvers in unmanned vehicles
- Designed a pressure-balanced oil-filled electronics enclosure & proof-tested it in a hyberbaric chamber to full ocean depth
- Lead the design of maintenance & operations logistics of a next generation large displacement unmanned underwater vehicle [LDUUV]

8/2013 - 8/2014 **Co-Founder & Mechanical Engineering Lead** ⤳
*McGill Robotics – A.U.V. Design Team* – Montreal, Quebec
3rd place static, 10th place overall – AUVSI International RoboSub Competition in San Diego - July 2014

- Created and implemented a comprehensive team structure, brand strategy, work environment, and management system for a student organization with 98 members
- Lead all mechanical design, manufacturing, implementation, and testing for the team of 60 developing an autonomous underwater vehicle from scratch
- Designed the vehicle assembly with Inventor for FEA, dynamic modeling, 3D printing, machine drawings

9/2013 - 7/2014 **Development of a Variable-Friction Shoe-Surface Mechanism**
*Independent Interdisciplinary Design Project* – Montreal, Quebec

- Created from scratch a mechanism to fit in the sole of a shoe and dynamically simulate the friction of a full range of surfaces
- Designed the mechanical, electrical and software systems using Inventor and Arduino
- Manufactured complete functioning prototype of mechanism to 0.05mm tolerances using conventional milling & turning, CNCing, and welding
- Implemented a PD controller to actuate two compact braking pads using a stepper motor, gear system, and lead screws

9/2013 - 5/2014 **Development of the Propulsion & Control System for an A.U.V.** ⤳
*Mechanical Engineering Senior Capstone Project* – Montreal, Quebec

- Designed and simulated a 5-DOF propulsion and control system using C++ and ROS
- Implemented the system by interfacing with the planner, computer vision, and motor control

## Software & Programming Skills

Computer Aided Design: *SolidWorks, Inventor, AutoCAD*
Data Analysis: *MATLAB, Excel*
Programming Languages: *Python, C, C++, Objective-C, ROS*
Version Control Systems: *Git, Autodesk 360*
Web Development: *HTML5, CSS, Markdown, Jekyll, Google Analytics, SEO*
Media & Graphics: *Illustrator, Lightroom, Photoshop, InDesign, Final Cut Pro*

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