

# Adam Heins

2B Mechatronics Engineering  
University of Waterloo

[www.adamheins.com](http://www.adamheins.com)  
[adamwheins@gmail.com](mailto:adamwheins@gmail.com)  
(905) 467-3826

## Technical Skills

**Languages** – C/C++, Java, Python, Javascript, HTML5, CSS3/SCSS, MATLAB, SQL

**Frameworks and Libraries** – JQuery, Bootstrap, JUnit, AngularJS, Node.js, Express, Facebook SDK, ROS

**Tools and Software** – MongoDB, Maven, Git, Eclipse, Visual Studio, Maple, Sublime Text, Windows, Linux

## Work Experience

**Software Developer at BlackBerry** Mississauga, ON. Summer 2013

- Built an automated testing framework for the entire BBM service in Java, using the SipUnit and JSip libraries to simulate the SIP call flows of the real system. Automated over 500 tests, reducing testing time from several hours to under 30 minutes.
- Integrated testing framework with REST APIs and a Cassandra cluster to validate user and message statistics.
- Designed and implemented an internal tool in Java to automatically configure files deployed from Jenkins.

**Content Developer at Maplesoft** Waterloo, ON. Fall 2013

- Coded advanced math and physics questions on the MapleTA platform.
- Designed algorithms to generate and solve questions with as many as 1,000 random permutations each.
- Performed detailed quality assurance and editing of final question packages.

**Software Developer at Uniprint** Toronto, ON. Winter 2013

- Led project development of a desktop application for collecting statistics from large networks of printers in C++.
- Built a Firebird SQL database to efficiently organize and store printer data.
- Designed algorithms to analyze printing statistics and pinpoint bottlenecks where Uniprint printer driver software could ease flow and reduce costs. Achieved printing cost savings of 20-30% on average in practice.

## Education

**Candidate for Bachelor of Applied Science** September 2012 – April 2017 (expected)

Mechatronics Engineering at University of Waterloo, Class of 2017

## Personal Projects

(See more at [www.adamheins.com/projects](http://www.adamheins.com/projects))

### Personal Website

Created my own personal blog and project site located at [www.adamheins.com](http://www.adamheins.com). Written using the Express framework for Node.js and backed by MongoDB.

### BigInteger.js

Built a javascript library implementing arbitrarily-sized integers and common operations including arithmetic, exponentiation, and primality checking. View the source at <https://github.com/adamheins/biginteger.js>.

### Angular Base Converter

Wrote a web-app for performing arbitrary numeric base conversions using AngularJS. Inspired by my digital logic class and the desire to check my binary conversions. View the source and try it at <https://github.com/adamheins/angular-base-converter>.

## Additional Activities

**University of Waterloo Robotics Team** January 2014 – present

Working primarily on the Mars Rover team. Currently working on integrating the system with ROS and refactoring the mapping algorithm to use smaller and shorter objects as reference points. Wrote an interface between a remote control and the robot-mounted Arduino microcontroller in C++. Implemented an algorithm to control the robot's arm from the microcontroller.