Adam Heins

Mechatronics Engineering

mail@adamheins.com
https://adamheins.com
https://github.com/adamheins

Skills

- Languages: C, Java, Python, JavaScript, MATLAB
- Software: git, GDB, jQuery, Node.js, Express, MongoDB, AngularJS, ROS, vim
- Hardware: PLCs, FPGAs, soldering, circuit design

Work Experience

Pebble Technology — Palo Alto, CA
Embedded Firmware Developer — Jan 2015 – Apr 2015

- Developed a robust dialog windowing system for the Pebble Time Smartwatch in C.
- Built core Golf and Sports APIs for the Pebble Time Smartwatch.
- Contributed to internal scripting language known as MonkeyScript; designed a new engine for MonkeyScript 2.0.
- Implemented screenshot and power calibration tools for automated testing in Python.

BlackBerry — Mississauga, ON
Software Developer — May 2014 – Aug 2014

- Built a simulation of the entire BBM call flow in Java in order to automation integration tests. Automated over 500 tests, reducing total 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.
- Wrote an internal tool in Java to automatically configure files deployed from Jenkins.

Maplesoft — Waterloo, ON
Content Developer — Sept 2013 – Dec 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 validation and editing of final question packages being shipped to customers.

Uniprint — Toronto, ON
Software Developer — Jan 2013 – Apr 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 by 20-30%.

Education

University of Waterloo — Waterloo, ON
Bachelor of Applied Science, Mechatronics Engineering — Sept 2012 – Apr 2017 (expected)

- Relevant Courses: Algorithms and Data Structures, Digital Logic, Real Time Operating Systems, Signal Processing, Finite Elements, Introduction to Microprocessors

Projects

Predator Prey Simulation (https://github.com/adamheins/predator-prey-sim)
A web-based simulation of flocking birds being hunted by predators, exhibiting swarm intelligence.

Dervish (https://github.com/adamheins/dervish)
A Java command line tool for evaluating and differentiating mathematical functions symbolically.

BigInteger.js (https://github.com/adamheins/biginteger.js)
A JavaScript library for arbitrary-sized integer mathematics.

University of Waterloo Robotics Team
Wrote software for Mars Rover project using Python, ROS, and Arduino.