

# JOSHUA MACDONALD

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## TECHNICAL SKILLS

**Programming Languages:** Java, C/C++, HTML, JavaScript, SQL, Jade

**Other Skills:** Node.js, JUnit, Unix, MongoDB, Github, Selenium IDE, JSON, OOP and Design, SVN

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## RELEVANT PROJECTS AND EXPERIENCE

### Comic Book Website

January – April 2016

- Created a comic book website with different user capabilities using REST architecture.
- Used Node.js framework, MongoDB to store data, and Bootstrap for interface design.
- Used Ajax to create seamless user interface.

*Skills:* Bootstrap, REST, Ajax, MongoDB, Node.js,

### Exploratory C++ Project: Puzzle Solver

January – April 2016

- Helped create a general puzzle solver.
- Implemented how various data structures would handle deletions and insertions in C++.
- Performed runtime analysis to see which data structures were best for solving particular puzzles.

*Skills:* C++, gdb, data structures, algorithms

### Exploratory C Projects: Unisex Bathroom Problem

January – April 2016

- Created a scenario in which men and women could legally access a single bathroom while the code ran asynchronously.
- Used threading to make code asynchronous.
- Used spinlocks and mutex locks to prevent race conditions from occurring.

*Skills:* C, gdb, Linux

### Meetup App, February

April 2015

- Built a scheduling application developed in Java for Android devices, implementing object-oriented design.
- Fetched and parsed location data from Foursquare web API in JSON to provide information to user.
- Embedded Google maps and location services (GPS) API to offer real time rerouting

*Skills:* Java, Android, IntelliJ, APIs, JSON Parsing

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## OTHER WORK EXPERIENCE

**Lifeguard and Swimming Instructor, UBC Aquatic Centre** May 2015 - Present

- Maintain first aid standards around pool environment.
- Teach basic to intermediate swimming skills to children and adults.
- Maintain the chemical and pH balance of the pool.

**Sailing Instructor, Surrey Sailing Club** May 2011 – August 2012

- Taught basic to intermediate sailing skills to children and adults.
- Maintained Canadian standard of teaching to all students.
- Acted as boat safety attendant during races and regattas.

**Sales Associate, Top to Bottom Home Services** May 2014 – August 2014

- Went door-to-door selling home services to homeowners.
- Provided expertise of home repairs and services to homeowners
- Obtained between 8 to 10 quotes per work day.

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## EDUCATION

**Bachelor of Computer Science, UBC** September  
2015 – Present

- Learning about computer science, including broad subjects of software development, computer hardware, data structures, memory usage, and databases.

**Bachelor of Science in Geographical Biogeosciences, UBC** September  
2010 – May 2015

- Focused on mapping and spatial analysis using geographical information systems (GIS).
- Studied climatology, geomorphology, and hydrology.

**Associate Degree in Piano Performance, Royal Conservatory of Music**  
August 2011

- Learned and performed expert level piano pieces from various historical periods.

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## INTERESTS

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| • Biking   | • Running | • Video Games |
| • Swimming | • Sailing | • Piano       |