

# JAMIE A. MACDONALD

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## Objective

I am looking for **fast-paced** summer employment in the field of **Software Development**. I have a strong **math and programming background** from my studies and hobbies, and I am excited by **elegant, innovative** solutions to human problems.

## Education

2010–2014 | **BSc Mathematics & Engineering, Computing and Communication**  
Queen's University, Kingston Ontario

## Programming

**Git** guru; **Python** web dev in Django, Flask; OOP; scripting; Abstract Syntax Tree parsing; Decorators; list comprehensions; Matplotlib, Scipy, Numpy; Sphinx; **Linux: bash, fish** scripting; **C** Makefiles, compiler flags, memory management; **Java** Generics, AWT, canvas; **C++** OOP; **Javascript**; Coffeescript; Nodejs, D3, jQuery; closures, modules, namespacing; **HTML**; Liquid, Jinja, Jade templates; **CSS**; SCSS, Stylus; Box model; **Octave, Matlab**; **LaTeX**; Algorithms, Data Structures

## Mathematics

**Probability**, Stochastic processes; **Information Theory**, Data Compression, **Communication Theory**, **Coding Theory**, Algebraic Structures; **Control Theory**, Differential equations, Linear time-varying systems; **Signals**, **Linear Systems**, **Transform Theory**, Sampling, Linear Algebra

## Projects

2013–2014 | **Channel-Optimized Vector Quantization of Correlated Images for Transmission over a Wireless Channel (Fourth Year Project/Thesis)**  
Implement a Lossy Joint Source-Channel Code which exploits the Correlation in two random sources (images)  
(Information Theory, C programming, Python matplotlib, LaTeX writeup)

2010 | **Child Soldier Cycle (Activism)**  
Biked 3000km from Ottawa to Newfoundland running an awareness campaign for child soldiering – collected over 1500 red handprints as a petition to the media to provide better coverage of global Child Soldiering issues  
Leadership, outreach, perseverance, organization

## Work Experience

Summer 2014 | **Software Programmer – IBM Watson Visualization Engine**  
Maintain charting/vis engine (Java); frontend JS demo app, evaluate API; D3js, jQuery; agile development; Java AWT, canvas; GeoJSON  
Collaborate with an international team; build strong communication skills

## Activities

**Open Source contributions:** Openbox (C), Nitrogen (C++ GTK)

**Clubs:** Queen's Hack Nights

**Recreation:** Yoga, Rockclimbing, Biking, Longboarding