

**WORK
EXPERIENCE****Khan Academy**
Mountain View, CASoftware Developer Intern
August 2011 - present

- Investigating, implementing, and evaluating different machine learning algorithms for our new student proficiency metric
- Data visualization in Python

University of Waterloo
Waterloo, ONUndergraduate Research Assistant
May 2011 - present

- Implemented algorithms for MapReduce to find clusters of near-duplicate documents in a web crawl
- Optimized runs on Amazon Elastic MapReduce

Google
Mountain View, CASoftware Intern
January - April, 2011

- Designed and implemented a multi-threaded cross-platform automation framework for Google Earth in C++

Google
Waterloo, ONSoftware Intern - Mobile
May - August, 2010

- Implemented product features for Google Mobile Docs by finding creative workarounds for browser bugs
- Derived cubic Bezier math for emulating native scrolling using CSS 3D transforms - <http://googlemobile.blogspot.com/2010/10/gmail-in-mobile-safari-now-even-more.html>
- Optimized speed by exploiting JavaScript implementations and improving data structures

TD Bank Financial Group
Toronto, ONIT Student Analyst
August 2009

- Developed data analysis tools to process business data and generate reports
- Developed automation software saving an estimated 65 minutes daily

SKILLS**Technical Knowledge**

- Python (Django, Google App Engine): Khan Academy backend, social web startup, hobby projects
- JavaScript: Optimizations and browser bug workarounds for Google Docs
- C++: 6 years of experience through work, personal projects, contests, robotics, and school
- Experienced with HTML, CSS, C, C#, Qt, Google Closure Tools, MIPS assembly, AWS (EC2, Elastic MapReduce, S3), Hadoop, GNU Make
- Prior experience: Bash scripting, Scheme, L^AT_EX, XPath
- Platforms: Linux command line, Ubuntu, Mac OS X, Windows
- Tools: Proficient with Vim and Git; worked with Mercurial, Perforce, SVN, Visual Studio

Projects

- First place optimizing compiler for university competition
- Artificial intelligence bots: Gomoku, competition Tron, competition Rock-Paper-Scissors
- WEP/WPA penetration-testing GUI application on BackTrack 3
- Multiple web apps: backends in Django + MySQL and C# + ASP.NET

- Designed and implemented a trie-based word-prediction system for an educational toy robot
- MSN plugins: conversation bot, multiplayer display name game
- High school: FIRST Robotics controller, Xbox 360 game, tournament scheduler, automation scripts

General

- Regularly competes in programming contests, including ACM, Google AI contest, CCC, Project Euler, USACO
- Interested in artificial intelligence, compilers, algorithms, and functional programming

UNIVERSITY ACTIVITIES

Entrepreneurial Project Programmer

Winter, Fall 2010

Developed a motivational learning website and professional network-building service in teams of three and four, respectively. <http://velocity.uwaterloo.ca/student-posts/heres-looking-at-you-cinq-me>

ACM Programming Contest Competitor

2009 Fall

One of 9 students selected to represent U Waterloo. Trained five hours twice per week with teammates on algorithm problems. Rapidly wrote and debugged code during competition; attained 13th out of 115 at East Central North America.

Software Engineering Class Representative

2009 Fall - Present

Took the initiative to write weekly email updates to the class. Co-founded the *Give Me Your Knowledge* student talks series. Founded course on open-source development (work in progress) - <http://os499.github.com>

IEEE Student Branch Member

2009 Fall - Present

Designed and implemented a mailing system for U Waterloo's IEEE website in ASP.NET and C#.

HIGH SCHOOL ACTIVITIES

Programming Team Leader

2007 - 2009

Revitalized club: advertised, recruited, taught lessons, organized practices, motivated participants. Achieved top 5 in provincial competition.

FIRST Robotics Team Leader

2008 - 2009

Facilitated communications, organized meetings, and headed programming team.

Programming Competition Finalist

Mar. 2009

National Bronze Medalist (top 20 in Canada) in the Canadian Computing Competition.

Programming Competition Champion

Oct. 2008

Bot coded in Java attained first place in Toronto-area high school AI competition. <https://www-927.ibm.com/ibm/cas/cascon2008/hspc/results.html>

Peer Tutoring Club Lead Tutor

2008 - 2009

Xbox Media Trade Show Presenter

Aug. 2007

Invited by Microsoft to present a video game developed using C# in XNA at X07 in Toronto. Was a hit with the blogs: <http://www.thebbps.com/articles/content/x07-warpong.html>

EDUCATION

Candidate for Bachelor of Software Engineering

University of Waterloo

2009 - 2014 (expected)

- Member of the VeloCity start-up incubator (<http://velocity.uwaterloo.ca>) for two terms

High School Diploma

Western Technical-Commercial School, Toronto

2009

- Enrolled in the gifted/enriched program; highest average in graduating class (97.5%)

AWARDS

- Math and Engineering Dean's Honour List for all terms, University of Waterloo
- Engineering Faculty Entrance Scholarship, University of Waterloo
- Queen Elizabeth II Aiming for the Top Scholarship
- Governor General's Academic Medal, Western Tech
- Euclid Mathematics Contest School Champion, Western Tech
- McCall Award for Computer Science and Engineering, Western Tech
- Student Recognition Award, Western Tech

INTERESTS

Ping pong, biking, swimming, jogging, camping, reading, free food