

Highlights of Qualifications

- Over 10 years of programming experience
- Highest GPA in graduating class (University of Alberta)
- Participated in numerous computer programming contests including ACM ICPC
- Proficient in Java, regularly use Eclipse, Linux, git, Python, matlab, HMTL, CSS; have worked in C++, SQL, PHP, Javascript, Perl and Game Maker Language
- Ready to take initiative, quick learner, intellectually curious, enjoys challenges, attentive to detail

Work Experiences

Sep 2013 – Present Graduate Studies at the University of Waterloo: CrowdSourcing Systems

- Studied CrowdSourcing systems with the goal of designing algorithms that are able to best utilize responses of potentially unreliable workers, on tasks with varying difficulties
- Mathematical analysis of the proposed algorithms for provable guarantees on their performance

May 2012 – Aug 2012 NSERC USRA in the Dept. of Mathematics: Polygonal Billiards

- Worked on programs aiding mathematical research on periodic trajectories in triangles
- Extended the functionality and improved the efficiency of a software family of over 15k lines of Java code
- Modularized the existing code, introduced JUnit testing and version control to the project
- worked on UX design and implementation
- Doubled the speed of a computation intensive program

May 2011 – Aug 2011 NSERC USRA in the Dept. of Computing Science: Quoridor Player

- Worked on, and evaluated a UCT-based Quoridor player on clusters
- Improved the functionality of the base Quoridor program and the interface
- Contributed over 3000 lines of Java code in 35 classes

May 2010 – Aug 2010 NSERC USRA in the Dept of Computing Science: Solving Sokoban

- Implemented algorithms to reduce the search space of sokoban puzzles
- Added the calculated information as an overlay to a Sokoban game in order to evaluate the practicality of the algorithms
- Found that they fail to capture certain crucial components of the problem → is this necessary?

Projects

2013 A script to extract information from weekly seminar updates

- Wrote a google script that takes my school's poorly formatted weekly talk & seminar updates, extracts and pushes all information into a google calendar for convenient access

2013 A visual organizer of cars sold on Kijiji Classifieds

- Prototyped a website to visualize the locations of items (cars) from Kijiji on a map
- A simple yet effective tool for avoiding scheduling appointments sub-optimally

2012 Experiments with Android Apps and Wiimotes

- Created a View to display a moving line graph of floating point values, then fed accelerometer data into 3 copies of this widget for easy visualization
- Created an app prototype, featuring a spider-like creature in a cave, using AndEngine with Box2D extension for physics (<http://andventurez.blogspot.ca/>)
- After learning about how the Wii works, built a second wii sensor bar and created a simple plate balancing game for the Wiimote

2012 Implementing a new artificial intelligence algorithm to play sztetris

- Worked on extending a sztetris engine written in Java with a new Ai player
- The player is based on a new reinforcement learning algorithm that solves a cost-sensitive multiclass classification problem at each step

2011-2012 Databases, Computer Graphics and Machine Learning Class Projects

- Implemented a command line twitter-like system using Oracle SQL and Java with a partner
- Turned information extracted from Twitter into a Berkeley DB to allow for fast searching of terms
- Created a matlab automatic stock day-trader on a team of 3 using machine learning techniques
- Developed a hand-written letter recognition program that ranked 3rd in the class
- Wrote a program in C++, using OpenGL, that semi-automatically matches the 3D mesh of a human to a skeleton and animates the model based on motion capture information

2008 Hamlet Game

- Completed a simple Hamlet-inspired top-down shooter and puzzle game in Game Maker
- Assumed the position of project leader and programmer, partner provided graphics and designs

2007 Evolution-inspired optimization algorithm

- Wrote a program in which tiny creatures, whose DNA encoded a path to their mating site, learned, through the concepts of survival of the fittest and random mutations, how to get to their nest through the shortest path possible giving them more time to mate
- Later learned this is an example of evolutionary algorithms

2005–2008 New Generation Games (N2G)

- Founded and led a 3-member game development team
- Experimented with numerous simple games in Game Maker bringing the most promising ones to completion

Community Involvement

- Initiated and organized weekly Machine Learning Peer Teaching sessions at the University of Waterloo
- Organized a Machine Learning Theory reading group in 2013 at the University of Waterloo.
- Supervised two computer science high school interns at the University of Alberta in 2012. I guided their exposure to programming, reinforcement- and machine learning
- Oversaw the work of talented students solving programming contest problems in the math camp organized by the University of Alberta in 2010 and 2012.
- Tried and helped mark the “Iversion Exam”, a programming contest for Alberta High School students, organized by the Department of Computing Science

Selected Awards and Achievements

- 2013 – 2015 University of Waterloo Cheriton I award
- 2013 – 2014 NSERC Canada Graduate Scholarship-Master's
University of Waterloo President's Graduate Scholarship
- 2013 Lieutenant-Governor's (14k) Gold Medal
- 2009 – 2013 15 undergraduate awards including:
 - University of Alberta Academic Excellence Scholarship
 - Murray Thomas Gibson Memorial Scholarship in Mathematics
 - Dr Ali-Amir Husain Scholarship in Mathematics
- 2009 – 2012 NSERC Undergraduate Research Award
ACM ICPC International Collegiate Programming Contest Rocky Mountain Regionals
- 2007 – 2009 Invited to the provincial round of the Alberta High School Math Competition
- 2006 National recognition for computer game development in the c3 Computer Competition (www.verseny.c3.hu)
7th place in the acclaimed KöMaL Mathematics Competition (Mathematical and Physical Journal for Secondary Schools) (<http://www.komal.hu/info/bemutakozas.e.shtml>)

Education

- 2013 – 2015 Univ. of Waterloo: MMath in Computer Science, Machine Learning 4.0/4.0 GPA
- 2009 – 2013 Univ. of Alberta: B.Sc. Honors Mathematics with Computing Science Minor, 4.0/4.0 GPA