

## Objective

To find a position that challenges my creativity, continuously enhances my learning, and ultimately improves the lives of others.

## 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

## 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 git, Python, matlab, HTML, CSS; have worked in C++, SQL, PHP, Javascript, Perl and Game Maker Language
- Persistent problem solver with a strong foundation in Mathematics; ready and willing to apply self to challenges, to take initiative; intellectually curious, quick learner, resourceful and 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 2010 – Aug 2012 *NSERC USRA at the University of Alberta (3 terms)*

- Developed maintainable object-oriented systems and UX in Java
- Worked on programs aiding mathematical research on periodic trajectories in triangles in 2012
- Created a concurrent algorithm for a two-fold speedup over existing methods
- Implemented Graph Theoretical and Reinforcement Learning algorithms for the games of Sokoban (2010) and Quoridor (2011)

## 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 Javascript-based website to visualize the locations of cars from Kijiji on a map
- A simple yet effective tool to avoid scheduling appointments sub-optimally

2012 *Experiments with Android Apps and Wiimotes*

- Created an Android game prototype using AndEngine with Box2D extension for physics  
<http://andventurez.blogspot.ca/>
- Engineered a homemade wii sensor bar and created a simple plate balancing game for the Wiimote

*2012            Implementing a new Artificial Intelligence algorithm to play sztetris*

- 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
- 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

*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
- Prototyped many 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 Univ. 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

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](http://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>)