Karen Batch

(416) 704-2244 | karen.batch@queensu.ca | karenbatch19.github.io

EDUCATION AND AWARDS

Field of Study in Artificial Intelligence, MSc, Queen's University **Expected start September 2019**

This is a research-based master's degree program which is focused on addressing the growing need for graduates with an AI background. It is a 2-year program under the supervision of one of Queen's University's professors in the School of Computing.

Bachelor of Computing (Honours), Cognitive Science, Queen's University **Sept 2015 – June 2019**

The Cognitive Science Program is an Honours Subject of Specialization degree program, which incorporates courses from a variety of disciplines, including computer science, linguistics, psychology, philosophy, neuroscience, data analytics, and artificial intelligence. The most significant unanswered question in science today is how human beings are able to be intelligent and aware, and the discipline of Cognitive Science has the goal of integrating the results and efforts in the study of human cognition. Set to complete degree in June 2019.

- GPA: 3.9
- Dean's Honour List 2017-2018, Dean's Honour List 2016-2017, Dean's Honour List 2015-2016
- Recognized for proficiency in French from CBI Health Group
- Queen's Academic All-Star 2017-18, Queen's Academic All-Star 2016-17, Queen's Academic All-Star 2015-16
- Canadian University Synchronized Swimming League All-Canadian Athlete 2017-18, 2016-17 and 2015-16

EXPERIENCE

Software Developer, CBI Health Group, Toronto, Ontario **Summer 2017, Summer 2018**

- Handled database management, adding functionality into the company's back-office system, and created medical data collection tools (primarily using C#, SQL, and JavaScript), working an average of 50 hours per week.
- Dealt with data corruption and manipulation of data when adding it to the company's MS SQL relational database and adapting data conversion from the legacy system to the current production system.
- Designed medical data collection forms to be used on multiple platforms, such as Windows mobile devices and desktops, and connected the data points directly to the database using C# and JavaScript.
- Designed and implemented custom tooling to interact with JIRA to build reports for management regarding release readiness for specific projects, fix versions, or users; can also bulk edit issues in JIRA using the tool.
- Translated the back-office system and the mobile device application to French to support bilingualism in the Atlantic, Quebec, and other provinces.
- Resolved memory corruption and other technical issues by leveraging strengths in coding, debugging and integration testing.

Sales Associate, Lowe's Companies Canada, Mississauga, Ontario **Summer 2016**

- Worked in the Home Décor and Flooring departments, ensuring a positive experience for all customers, maintaining the availability and organization of inventory, ensuring the maintenance of a safe work environment, and developing knowledge of standard business processes for estimates, sales, and returns.

Summer Intern, Myndtec, Inc., Mississauga, Ontario **Summer 2014**

- Researched sales and marketing opportunities, completed a marketing plan to enter the United States market, and presented the plan to the senior management of the start-up company developing neuro-rehabilitation technology.

TECHNICAL SKILLS / LANGUAGE SKILLS

Systems: Windows, Linux

Languages: Java, JavaScript, C, C++, C#, MATLAB, Python, Prolog, Assembly, Haskell, PHP, MySQL, SQL, HTML, XML, XAML, Arduino, Object-Oriented Design and Architecture

Software: JIRA, Eclipse Neon, MS Visual Studio, MS Office, MS Excel, MS Word, Adobe Photoshop, Adobe Illustrator, Adobe Flash, Watson, GitHub, Jupyter Notebooks, SAS, KNIME

Verbal Languages: English and French (spoken and written)

EXTRACURRICULAR EXPERIENCE / PROJECTS / ATHLETICS

Queen's Global Innovation Conference 2018 — January 2018

I was invited to be a delegate at the Queen's Global Innovation Conference in January of 2018. The keynote topic of the conference was artificial intelligence, bringing in speakers from across North America. In the innovation challenge, my group placed second, presenting the concept of artificial intelligence augmenting health care. Our concept revolved around the idea of a system of sensors integrated into the central nervous system, constantly monitoring and learning each individual's natural homeostatic state, therefore being able to anticipate medical emergencies, and contact emergency services. The system would connect to a secure, centralized system, and would transmit all historical and current personal medical data to the destination hospital, eliminating the time needed to triage patients, and increasing the chances of patient survival. Our concept was very well received by the panel of judges, and we were commended for our creativity.

Team Lead, Queen's Machine Intelligence and Neuroevolution Design Team — Sept 2018 – Present

- Team lead of an internal QMIND team that is working on building a multi-class predictor of diseases given X-rays of a patient's chest
- Our model will be trained on the National Institutes of Health Chest X-Ray Dataset (source: Kaggle), which consists of over 112,000 chest x-ray images from more than 30,000 unique patients
- At the beginning of the scholastic year, QMIND received over 200 applications, and conducted a thorough interview process to accept 100 members for the current year. There are over 20 project teams within QMIND, whose fields range from business to health care to music. As one of Queen's University's newest design teams, the organization is demonstrating immense success and collaboration helping teach and implement a wide variety of machine learning, data analytics, and artificial intelligence techniques.

Member of Satellite Team, Queen's Space Engineering Team — Sept 2017 – Aug 2018

- Command & Data Handling Team, programming the main program of the on-board computer in C and C++, storing data and handling timing of multiple payloads, and communications with the ground station
- Writing the timing and priority of commands, ensuring autonomy in the system while unable to communicate with ground station, and allowing for the interruption of processes by commands received

Competitive Synchronized Swimming — Sept 2002 – Present

- Vice President and Athlete on Queen's Varsity Synchronized Swimming Team; 2015 – present
- Mississauga Synchronized Swimming Association; 2008 – 2015
  Provincial Champion Duet, Solo, Figures, and Team events throughout my career
  Competed at the US Open Synchronized Swimming Championships; Team Ontario; Irving, Texas; 2013

Mountain Biking, Snowboarding, Reading

REFERENCES

Roger Jones, Development Manager, CBI Health Group
Email: rog-jones@cogeco.ca
Home: (905) 873-3083

Jim Arbuthnot, Vice President of Software Development, CBI Health Group
Email: james.a.arbuthnot@gmail.com
Cell: (416) 520-1680

Robert Chai, Software Consultant, CBI Health Group
Email: rchai.g@gmail.com
Cell: (647) 286-4292