KAREN BATCH

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Education & Awards

FIELD OF STUDY IN ARTIFICIAL INTELLIGENCE, MSC | START SEPT. 2019 | QUEEN'S UNIVERSITY

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 | JUNE 2019 | QUEEN'S UNIVERSITY

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 intelligent and aware, and the discipline of Cognitive Science has the goal of integrating the results and efforts in the study of human cognition.

- Overall GPA: 3.9
- Dean's Honour List 2017-18, 2016-17, 2015-16
- Queen's Academic All-Star 2017-18, 2016-17, 2015-16
- Canadian University Synchronized Swimming League All-Canadian Athlete 2017-18, 2016-17, 2015-16

Technical & Language Skills

SYSTEMS

Windows, Linux

PROGRAMMING LANGUAGES

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

VERBAL LANGUAGES

English and French (spoken and written)

SOFTWARE

JIRA, MS Visual Studio, Eclipse Neon, MS Office, Watson, GitHub, Jupyter Notebooks, SAS, KNIME, SQL Server, PyCharms, Slack

Professional Experience

SOFTWARE DEVELOPER | CBI HEALTH GROUP | APRIL 2017 – SEPT. 2017 & APRIL 2018 – SEPT. 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)
- 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 various 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 Canada
- Worked in an Agile team environment for our software development projects

SALES ASSOCIATE | LOWE'S COMPANIES CANADA | APRIL 2016 – SEPT. 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. | JUNE 2014 – JULY 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

Conferences

Presenter – Canadian Undergraduate Conference on Artificial Intelligence | Kingston, ON | Mar. 2019

A new conference in 2019 hosted by the Queen's Machine Intelligence and Neuroevolution Design (QMIND) Team, of which I am a member (see below for details). Each team within QMIND will be presenting their project to attendees and corporate sponsors.

Attendee – Canadian University Software Engineering Conference | Montreal, QC | Jan. 2019

Delegate – Queen's Global Innovation Conference | Kingston, ON | Jan. 2018

I was invited to be a delegate at the Queen's Global Innovation Conference in January of 2018. This year's keynote topic was artificial intelligence, bringing in speakers from across North America, and from various industries. In the innovation challenge, my group placed second, presenting the concept of artificial intelligence in augmenting the health care system. Our concept was 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.

Extracurricular Experience & Athletics

Team Lead – Queen's Machine Intelligence and Neuroevolution Design Team | Since Sept. 2018

- 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 Institute of Health's 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 academic 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, with project domains ranging 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 in helping teach and implement a wide variety of machine learning, data analytics, and artificial intelligence techniques.

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 | Since Sept. 2002

- Vice President and Athlete on Queen's Varsity Synchronized Swimming Team; Sept 2015 – Present
- Various competitive synchro clubs in Ontario; 2002 – 2015
- Provincial (Ontario) Champion in Duet, Solo, Figures, and Team events throughout my career
- Competed at the US Open Synchronized Swimming Championships on Team Ontario; Irving, Texas; 2013

References

Available upon request