Sean Stappas

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EDUCATION

McGill University Bachelor of Engineering (Honours Electrical)
Montreal, QC | *Sep. 2014 – May 2018*
- GPA: 4.0

Marianopolis College Diploma of Collegial Studies (Pure and Applied Sciences)
Montreal, QC | *Sep. 2012 – Jun. 2014*
- R Score: 35.757

Collège Notre-Dame Secondary School Diploma
Montreal, QC | *Sep. 2007 – Jun. 2012*

WORK EXPERIENCE

Microsoft Software Engineer
Redmond, WA | *Sep. 2018*
- Will work as part of the **Cloud and Enterprise** division.

Amazon Software Development Engineer Intern
Vancouver, BC | *Jun. 2017 – Aug. 2017*
- Added support for a **group by** clause and **aggregate functions** (sum, average, count, etc.) in an **SQL**-like language used to query subledger data from **DynamoDB** and **S3.** This made it easier for developers and accountants to aggregate financial data.
- Parallelized the above queries by using **MapReduce** with the Apache **Spark** library, greatly increasing their speed and efficiency.
- Practiced behavior-driven development (**BDD**) by creating unit tests with **Mockito**, **JUnit**, and **Guice**, covering **95%** of the project.

Tactio Health Group Digital Health Software Developer Intern
Montreal, QC | *May 2016 – Aug. 2016*
- Created a **PHP** mock data generator with daily **Cron** jobs and a producer-consumer queue in **MySQL**, allowing for more realistic simulation of patients with various medical conditions.
- Developed a **PHP** testing framework covering **60%** of the back-end API, leading to increased bug detection before deployment.

JNPSoft Java Developer
Montreal, QC | *May 2015 – Aug. 2015*
- Made importing of car parts data from Excel to an **SQL** database over **300 times** faster by implementing a bulk import in **Java.**
- Practiced test-driven development (**TDD**) with **TestNG**, leading to safe and reusable code.

PROJECTS

Microprocessor Systems Project Android & Cloud Developer
Jan. 2018 – Apr. 2018
- Created an **Android** app to process accelerometer data as well as transcribe microphone audio.
- Used **Plotly** to create an online plot of the pitch and roll accelerometer data.
- Transcribed audio via the **Google Cloud Speech API** using 16 kHz audio encoded at 2 bytes per sample.

Artificial Neural Network Developer
Sep. 2017 – Dec. 2017
- Created a fully connected **artificial neural network** from scratch using the **Numpy Python** library with a teammate.
- Identified handwritten digits after supervised back-propagation learning with an accuracy of **98.1%**.

Qbert Game AI Agent Developer
Sep. 2017 – Dec. 2017
- Created an autonomous agent capable of playing the **Qbert** game on the **Arcade Learning Environment**.
- Used reinforcement **Q-learning** with various generalization and exploration methods.
- Achieved **2nd place** in the tournament showcasing all the agents in the class.

Connect-Four AI Agent Developer
Sep. 2017 – Dec. 2017
- Created an agent capable of playing a competitive **Connect-Four** game with an opponent as part of the **ECSE 526** course.
- Used **minimax** search with **alpha-beta** pruning and various heuristics to predict the most advantageous moves to take.
- Achieved **2nd place** in the tournament showcasing all the agents in the class.

TLDR News App Lead Developer
Jan. 2017 – Dec. 2017
- Developed the idea of a service delivering summaries of relevant news as part of a project in the **BUSA 465** course.
- Created **iOS** and **Android** apps powered by **AWS** providing personalized daily summaries of the latest news.
- Participated in the Fall 2017 startup validation program at the **District 3** innovation center with a partner.

Prometheus AI Honours Thesis
Jan. 2017 – Dec. 2017
- Created the Expert System and Knowledge Node Network **Java** layers of Prometheus AI, whose goal is to control multiple robots.
- Created thesis reports for the supervisor and a poster for the public presentation of the work.
- Supervised and guided two volunteers in the lab over the summer to help expand the functionality of the system.

Flatmate App Lead Developer
Sep. 2016 – Feb. 2017
- Created an **Android** app powered by **Firebase** to help like-minded individuals find roommates and apartments.
- Participated in the 2017 semi-finals of the **McGill Dobson Cup** with two business partners.

Breakout Game Developer
Sep. 2016 – Dec. 2016
- Created a **Breakout** game in **VHDL** on the Altera Cyclone II **FPGA** with an external RGB display.
- Implemented distinct levels with increasing difficulty and useful powerups for the player.

McGill Robotics Drone Team Member
Sep. 2015 – May 2016
- Created two-player Connect-Four game using **Arduino**, 70 LEDs, shift registers and a Redboard microcontroller as a mini-project.
- Planned the selection of parts for a UAV designed to compete in the AUVSI SUAS competition in 2017.

Robot Competition Project Manager, Java Developer
Jan. 2015 – Apr. 2015
- Designed an autonomous **robot** with ultrasonic and light sensors capable of navigating a map and launching balls at targets.
- Implemented obstacle avoidance, moving-average, and differential filtering algorithms in **Java.**
- Participated in a competition to test the robot's functionality in action against other teams.

AWARDS & SCHOLARSHIPS

Ernest Brown Gold Medal	2018	J. B. Woodyatt Scholarship	*2015*
McGill University Dean's Honour List	*2015 – 2018*	John Howard Ambrose Scholarship	*2015*
Ralph M. Collins & Ruth G. Collins Scholarship	*2017*	J. W. McConnell Scholarship	*2014*
Beverly and Arthur Mendel Family Scholarships	*2016*	*Marianopolis College Dean's List*	*2014*
NSERC Experience Award	*2016*	*Marianopolis College Honour Roll*	*2014*
Mary Gilsig Scholarship	*2015, 2016*	*Marianopolis College Scholar*	*2014*

TECHNICAL SKILLS

Programming Languages: Java, Python, C, PHP, Swift, Objective-C, Arduino, VHDL, SQL, MIPS Assembly, LaTeX
IDEs & Editors: Eclipse, Android Studio, IntelliJ IDEA, Visual Studio, Xcode, Sublime Text, vim, Arduino, IDLE
Databases: MySQL, DynamoDB, Firebase, MS SQL Server, MS Access
Operating Systems: Windows, macOS, Ubuntu, CentOS

LANGUAGES

English: fluent
French: fluent
Greek: conversational