

# Stuart Mashaal

SOFTWARE ENGINEER | TN VISA CANDIDATE

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## Education

### McGill University

Montreal, CA

B.S.ENG - BACHELOR OF SOFTWARE ENGINEERING (ACCREDITED ENGINEERING DEGREE)

September 2015 - April 2019

**Advanced Coursework:** Concurrent Programming, Distributed Systems, Cloud Computing, Applied Machine Learning, Compilers

## Experience

### Nuance Communications

Montreal, CA

SOFTWARE ENGINEERING INTERN - (JAVA, ACTIVEMQ, SQL, PYTHON/PANDAS/SKLEARN, NODEJS)

May 2018 - August 2018

- Collected job history data from production databases to train classifier for job duration
- Used Random Forest to achieve 97% accuracy on balanced dataset (k-fold cross-validation). Presented report to engineering team
- Improved usability and responsiveness of data-aggregation CLI tool

### SourceKnowledge

Montreal, CA

SOFTWARE ENGINEERING INTERN - (PHP, SYMPHONY, JQUERY, HANDLEBARS)

May 2017 - August 2017

- Added features (frontend and backend) to analytics dashboard of real-time ad-bidding system
- Developed bid-multiplier logic based on Google's website categorization, added to real-time ad-bidding system

### IntimateData / DataProphet

Cape Town, South Africa

DATA SCIENCE INTERN - (PYTHON, SKLEARN, R, SQL)

June 2016 - July 2016

- IntimateData: scraped, cleaned and visualized S.A. demographic and language data. Incorporated into existing MySQL DB.
- DataProphet: researched sentiment analysis algos (e.g. LSTM) for Twitter-Bot project. Developed XGBoost-based classifier of EEG waves for 'mind-control wheelchair' prototype

## Projects

### NorthernlightsVision

Personal Project

(JAVASCRIPT, AWS, TERRAFORM, TENSORFLOW)

August 2019 - Present

- A tool to notify users about northern lights visibility and provide related charts and information
- Set up all AWS configuration, then ported it to Terraform. Developed data-labelling interface
- Used popular ConvNet to classify night sky as containing Aurora Borealis (or not)

### Distributed Transactions Project

Distributed Systems, McGill

(JAVA RMI, CONCURRENCY/PARALLELISM, TWO-PHASE COMMIT)

September 2018 - December 2018

- A system for travel reservations (flights, cars, hotel rooms)
- Designed and implemented a distributed system including lock management and consensus protocol
- 2 separate communication implementations: one using RMI, one using Java Object Serialization

### ConuCoursePlanner

Personal Project

(JAVA TOMCAT, NODEJS, R, REACT, MONGODB)

January 2017 - January 2018

- A tool to help incoming freshmen select the course sequence of their curriculum
- Developed entire data pipeline: web scraper, data validator, and storage. Wrote the project's core curriculum validation algorithm.
- 100 unique active users per month

### Cebolla (Onion Routing Network)

Telecomms & Networks, McGill

(PYTHON, CRYPTOGRAPHY, MULTITHREADING)

September 2017 - December 2017

- Wrote all code for router node and directory node algorithms
  - Cryptography was handled with direct use of RSA and AES
  - Tested on cluster of 100 servers

## Skills

**Programming** Java, SQL, Python, Javascript, OCaml, Bash, Go, Haskell, R

**Cloud & Infra.** Linux, Git, Basic Networking, Terraform, AWS, Docker/Kubernetes

**Other** French (B2), Guitar, Public Speaking