# Mohamad Makkawi

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## EDUCATION

**University of British Columbia,** Vancouver, Canada                   Sep 2018 - Jul 2019
Master (MSc.) of Data Science, GPA: 3.99/4.00

- Courses: Machine Learning, Cloud Computing, Causal Inference and Experimentation, Algorithms

**McGill University,** Montreal, Canada                   Sep 2011 - Jun 2016
Bachelor of Engineering (B.Eng.) - Electrical

## EXPERIENCE

**Emergency Comm. of British Columbia,** Vancouver, Canada          Apr 2019 - Jul 2019
Data Scientist - People Analytics

- Handlers of 6M+ 911 emergency calls since 2016, and dispatchers for 25 police/fire departments in B.C.
- Working with HR/Data teams to ensure data pipelines and datasets are built to scale and writing ETL scripts using PostgreSQL to extract data from multiple source systems
- Using supervised learning techniques (ex. Random Forests) to describe the effect of variables on employee attrition and to predict whether a call-taker will reach specific milestones (6mo, 1 year, +)
- Building probabilistic forecast model that takes in various call-taking performance markers and outputs number of expected absences to aid HR's ability to proactively staff call-takers.
- Analyzing employee/exit surveys using NLP techniques/sentiment analysis to aid in feature selection.

**GE Digital,** Dubai, UAE                   Dec 2017 - May 2018
Data Science Intern

- Preprocessed over 1M+ rows of raw aluminum smelting plant data and studied the effect of predictors on energy usage using multivariate regression analysis. Tools: scikit-learn, Python.
- Performed alarm pattern analysis on machine data and discovered most pertinent issues. Prepared data by combining alarms into indices and resolved class imbalance using SMOTE algorithm.
- Identified top 10 sensors relating to critical failure mode by using Random Forest algorithm. Trained two-layer deep neural net on variables selected for anomaly detection and prediction.
- Assisted in the development of long-term asset health predictive indicators in R that alert the maintenance team when the system parts are degrading. Resulting in savings of ~$800K for Y1.

**itsyuma.com,** Montreal, Canada                   Jun 2016 - Jun 2017
Product Analyst

- Implemented customer profile database in Airtable that allowed for monitoring of product metrics.
- Built models of user behaviours and identified customer segments. Unveiled bulk ordering behaviour. Adjustments by product team reduced churn by 20%.
- Performed quantitative research on mobile app usage to inform app redesign process. Shortened average time-to-purchase from 5 minutes to 2.5 minutes in new app launch.
- Designed and managed randomized experiments to measure performance of dynamic pricing feature.

## SKILLS

- **Programming Languages**: Proficient in Python, R, SQL, NoSQL - Familiar: Java, Javascript, C, MATLAB
- **Tools**: Git, MapReduce, Spark, AWS, BigQuery  **Visualization**: plotly, matplotlib, seaborn, ggplot2, Vue.js
- **ML libraries**: scikit-learn, Tensorflow, Keras, nltk **Statistics**: GLMs, Regression, Classification, Clustering