

ALEX MINNAAR

EDUCATION

University College London

November 2012

MSc in Computational Statistics & Machine Learning
London, United Kingdom

Queen's University

June 2011

BSc in Mathematics & Engineering - Control and Computing stream
Kingston, Ontario, Canada

Upper Canada College

June 2007

Ontario Diploma & International Baccalaureate Diploma
Toronto, Ontario, Canada

EXPERIENCE

VerticalScope, Inc

March 2014 - Present

Software Engineer

Toronto, Ontario, Canada

- Part of the Data Science team. Building large-scale, real-time natural language processing applications with unstructured social media data.
- Implementing NLP/machine learning concepts such as named entity recognition/disambiguation, topic modeling, sentiment analysis, and recommender systems.
- Using the Scala programming language with technologies such as Spark, Kafka, Elasticsearch and Cassandra.

Tucows, Inc

February 2013 - March 2014

Data Scientist

Toronto, Ontario, Canada

- Implemented statistical analysis to gain insight on customer churn.
- Developed several machine learning applications involving classification, clustering, collaborative filtering and sentiment analysis.
- Setup company's first Hadoop cluster using Amazon ec2 and Cloudera.

Advanced Algos, Inc

October 2012 - December 2012

Data Analyst Intern

Toronto, Ontario, Canada

- Performed data analysis tasks on CME and EBS data sets from Spot and FX markets.
- Wrote C++ programs to search for specific occurrences in large data sets.

RESEARCH AND PROJECT EXPERIENCE

MSc Thesis

University College London

New Methods for Identifying Small Mean-reverting Portfolios

- Studying the portfolio selection problem of extracting optimally mean-reverting portfolios from multi-variate time-series datasets while constraining the number of assets in the portfolio. Included comparison of approximation techniques such as greedy search, semi-definite relaxation, and genetic algorithms. Presents novel on-line learning algorithm that dynamically adjusts portfolio weights to achieve optimal mean-reversion.

Mathematical Programming and Research Methods

University College London

- Implementation of machine learning techniques in Matlab and Mathematica. These include gradient descent, linear/polynomial regression, kernel methods, perceptron algorithm, k-means clustering, PCA, and classification via SVMs.

Heritage Health Prize Kaggle Competition

- Competition in which contestants are given a training set of hospital patient data to build algorithms that predict the number of days a group of patients will spend in hospital for a given test set. Best results came from tree-based algorithms and boosting. Scored in top 75 out of 1300+ teams.

Undergraduate Thesis

Queen's University

Stochastic Systems with Data Rate Constraints

- A dynamical system was studied in which two noisy sensors are connected to a controller through a noiseless finite capacity channel. A stability result was presented in the case where the eigenvalues of the system matrix are real and distinct. A policy that achieves stochastic stability is also presented and is shown to asymptotically achieve the minimum average rate for the communication channel.

TECHNICAL STRENGTHS AND ACHIEVEMENTS

Programming Languages

C++, Java/Scala, Python, Javascript/JQuery.

Statistical Software

Matlab, R.

Databases

MySQL, Elasticsearch, Cassandra.

Hadoop & Big Data

MapReduce programming, Hive, Mahout, Spark.

Awards

Ontario Scholar.
Upper Canada College Prefect.
Euclid Math Contest Certificate of Distinction.

Certificates

Hadoop Fundamentals Certificate, *BigDataUniversity.com*.
C++ for Financial Engineering, *Baruch College*.

Personal Projects

alexminnaar.com (blog), github.com/alexminnaar (open source projects).

Interests

Brazilian Jiu-Jitsu, CrossFit, Music, Movies.