

# Barinder Thind

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## Education

### Simon Fraser University

*MSc. Statistics, GPA: 94%*

Burnaby, BC

*Sep 2018 || Apr 2020*

### Simon Fraser University

*BSc. Honours Statistics/Economics, UGPA: 89%*

Burnaby, BC

*Sep 2012 || Apr 2018*

## Work Experiences

### Quantitative Engineer

oQuant Inc.

Vancouver, BC

*May 2019 || Sep 2019*

- Developed models to be optimized using a proprietary AI programming language
- Discovered unique approach for earthquake prediction using support vector machines resulting in a mean squared prediction error improvement of over 12% from previous work
- Began work on an algorithm that can successfully identify salt deposits in seismic images

### Teaching Assistant

Simon Fraser University

Burnaby, BC

*Jan 2018 || Present*

- Marked and invigilated exams for introductory statistics courses (regression, ANOVA, etc.) while also providing help for students in various programming languages
- Developed communication skills to relay complex information in an understandable manner

### Research Assistant

Simon Fraser University

Burnaby, BC

*May 2018 || Aug 2018*

- Created a data scraper to help extract information from the Gene Expression Omnibus - a hub for data on genetics
- Worked on a number of data sets to expand my grasp of various modern statistical analysis techniques (PCA, tree methods, FDA)

### Methodologist

Statistics Canada

Ottawa, ON

*Jan 2017 || Apr 2017*

- Developed a scoring system that would help identify duplicate observations (brought upon by faulty submissions) within the Business Register (BR) through the use of Zipf's law
- Resulted in the identification of over 100,000 duplicate observations

### Data Processor

Hockey Data Inc.

Vancouver, BC

*Aug 2016 || Jan 2017*

- Primarily gathered hockey data using Excel and an analytics program such as benchmetrics
- Required extreme attention to detail and some knowledge of modern analytics in hockey (Corsi, Fenwick, etc.) was helpful

## Programming

### Statistical Programming:

R || SAS || EXCEL || SQL || TABLEAU

### Other Programming:

PYTHON || MATLAB || L<sup>A</sup>T<sub>E</sub>X || C++

## Projects

### Functional Neural Networks for Scalar Prediction

[View Project](#)

Generalization of neural network network input space - Publication in Progress

### Gaussian Processes

[View Project](#)

A detailing from the Bayesian perspective

### Neural Ordinary Differential Equations

[View Project](#)

An introduction to a key insight found by extending *Residual Neural Networks*

### The Relationship Between Heart Disease and Osteoarthritis

[View Project](#)

Implementation of an ensemble of the LASSO and propensity scores

### Least Angle Regression

[View Project](#)

A theoretical explanation of the LARS algorithm

### Signal Separation of Energy Sectors

[View Project](#)

An autoregressive approach applied to data signal separated by ICA and NMF

### Optimizing Travel Routes

[View Project](#)

A combination of the travelling salesman and k-means clustering

### Identifying Duplicates within the Business Register

[View Project](#)

Implementation of Zipf's law in the context of record linkage

## Awards

**Top Statistical Research Award - 3<sup>rd</sup> Place** May 2020

*Statistical Society of Canada*

**Graduate Researchship** May 2020 || \$6500

*Department of Statistics - SFU*

**Graduate Fellowship** Jan 2020 || \$6500

*Department of Statistics - SFU*

**Big Data Graduate Scholarship** Sep 2019 || \$6500

*Department of Computer Science - SFU*

**Case Study Competition - 2<sup>nd</sup> Place** May 2019

*Statistical Society of Canada*

**EFC Scholarship** Sept 2018 || \$1000

*Electro Federation Canada*

**KEY Big Data USRA** May 2018 || \$6000

*Department of Computer Science - SFU*

**Police Data Challenge - Honorable Mention** Nov 2017

*American Statistical Association*

**NSERC USRA** May 2017 || \$6000

*Department of Statistics - SFU*

**President/Dean's Honour List** Apr 2016 - Present

*Simon Fraser University*

## Organizations

**Hockey Hack Day in Canada**

Treasurer

*Sep 2019 || Present*

**Sports Analytics Club**

Member

*May 2018 || Present*

**Graduate Student Society**

Department Representative

*Sep 2018 || Apr 2020*