

AIDAN ROSS

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EDUCATION

McMaster University, Hamilton, Ontario

September 2017 - 2018

M.Sc. Computational Science & Engineering (Co-Chair and Program Ambassador)

Department of Mathematics and Statistics

Queen's University, Kingston, Ontario

September 2013 - May 2017

Bachelor of Applied Science (BASc) in Engineering Physics

EXPERIENCE

RBC Capital Markets

September 2019 - Present

Algo Data Scientist

Toronto, Canada

- Equities Algo trading development (Java)
- Equities Algo trading research (Python / kdb+/q)

October 2018 - September 2019

Global Equity Derivatives Quantitative Analyst

London, United Kingdom

- Front Office Equity Derivatives Desk Quant
- Developed new features and payoffs for exotic derivatives and structured products in the GELP Quant Library (C ++)
- Created various tools for traders (Python / VBA)
- Systematic trading strategies / Vol trading (kdb+/q)

McMaster University

September 2017 - September 2018

Graduate Teaching Assistant

Hamilton, Ontario

- Graduate Teaching Assistant for CAS 4ZP6: Computer Science Capstone Project.
- Responsible for managing teams of two to six students, who undertake a substantial project in an area of computer science by performing each step of the software life cycle.

University of Oxford - Target Discovery Institute

May 2016 - September 2016

Summer Research Intern

Oxford, United Kingdom

- Worked alongside Professor J. Rittscher and his research group to develop algorithms and methods for the quantification of large scale image data.
- Researched applications and implementation of Coupled-Minimum Cost Flow Cell Tracking Algorithm.
- Utilized machine learning algorithms to extracted quantitative data from Tissue Micro Array cores to investigate the existence of subclasses within a given breast cancer tumour grade.

PROJECTS

Model Calibration - Machine Learning / Finance

September 2017 - Present

Research Project w Dr. Matheus Grasselli

Reproduce and refine work done by Hernandez (2016) utilizing FNN for Financial model calibration.

Automation of Gleason Scoring in Prostate Cancer

September 2016 - April 2017

Fourth Year Thesis

Queen's University, Engineering Physics

- Utilized Deep Learning to aid in the automation of Gleason scoring in high grade prostate cancer.

- Applied three software iterations of Convolutional Neural Networks (CNN).
- Applied Transfer learning to VGG16 ConvNet architecture.
- Developed CNN able to classify whole slide prostate cancer images with an accuracy of 74.8%

Scaled Autonomous Vehicle

September 2017 - January 2017

Project Leader, Software Team

Queen's University, Engineering Physics Design Project

- Facilitated the implementation of a model autonomous vehicle capable of navigating around scaled city block.
- Implemented Artificial Neural Network for autonomous control.
- Applied various computer vision and machine learning algorithms for road and obstacle detection ie: Haar Cascade Classifiers, Otsu Thresholding Algorithm, Canny edge detection, etc.

Prostate Cancer Blood Test - Machine Learning/ Big Data

September - January 2017

Group Project

Queen's University, Electrical Engineering

- Supervised by Dr. Chris Mueller – Developed work-flow applying machine learning and big data techniques to identify promising biomarkers in a DNA methylation based blood test to enable early detection of prostate cancer.

Credit Fraud Detection

January - May 2018

- Researched and implemented methods for the detection of fraudulent credit card transactions from a highly imbalanced dataset.
- Implemented a logistic regression model to justify the use of various sampling algorithms
- Trained a random forest classifier
- Deployed a semi-supervised learning method to learn the compressed representation of the non-fraud transactions (Autoencoder).

TECHNICAL SKILLS

Programming Languages

Python, Java, MatLab, R, C/C++,KDB+/Q, Haskell, VBA

Software

Keras, Tensorflow, Pandas, PyTorch, PYOMO, LaTeX,
Comsol, LabView, Excel

PowerPoint

Skills

Quantitative Finance, Computer Vision, Machine Learning, Physics,
Mathematics, Algorithms, Modelling, Statistics

Deep Learning, Data Science, Optimization, Stochastic Calculus

PUBLICATIONS

Digital Analysis of Tumour Microarchitecture as an Independent Prognostic Tool in Breast Cancer

Oxford University Hospitals, May 2017

Co-Author

United States and Canadian Academy of Pathology Annual Meeting

- Main publication from summer internship at the University of Oxford.

Scanning Electron Microscope 3D Surface Reconstruction Via Optimization

McMaster

University

REFERENCES

References available upon request
