

TIANYU DU

Undergraduate Student Studying Economics and Mathematics at University of Toronto

CONTACTS & PERSONAL INFO

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EDUCATION

University of Toronto, Canada

Sep. 2017 - Jun. 2020(Expected)

Honours Bachelor of Science, Economics & Mathematics Specialist

Cumulative GPA: 4.00/4.00, Course Average: 94%.

Stanford University, United States

Jun. 2019 - Aug. 2019

Summer Session, Intensive Program in Data Science

Courses: CS229:Machine learning, STATS202:Data Mining and Analysis, STATS116:Theory of Probability(Undergraduate).

Cumulative GPA: 4.30/4.30, Course Average: 99%.

RESEARCH INTERESTS

Machine Learning Methods and their Applications on Time Series Forecasting.

Computational Economics, Simulations for Game Theory, and Market Design.

Behavioural and Experimental Economics.

SCHOLARSHIPS & AWARDS

Alexander Mackenzie Scholarship In Economics And Political Science

Oct. 2019

Dean's List Scholar(2018-19)

Jun. 2019

International Experience Award (Killam American Fund for International Exchange)

May. 2019

Dean's List Scholar(2017-18)

Jan. 2018

ACTIVITIES & PROJECTS

Thesis on Stock Market Forecasting from Textual Data

Honours Essay in Applied Microeconomics

Sep. 2019 - Apr. 2020

Top students from department of economics are selected to conduct their own original research in this program. My thesis focuses on forecast asset market movements from financial news. Specifically, sentimental analysis tools from natural language processing (NLP) are used to generate article-level sentiment scores. Then data science techniques including SVM, CNN-RNN are deployed to create predictive models and capture the underlying inter-temporal dependencies.

Patient Data Analysis on PANSS Dataset

Jun.2019 - Aug.2019

The Final Project for STATS202 at Stanford University (Final Report Class Top)

Positive and Negative Syndrome Scale (PANSS) scores of schizophrenia patients were used to test treatment effects, k-means and Gaussian mixture were used to cluster patients based on scores prior to treatment. Moreover, SVM, random forests, and boosting machines were developed to detect potential invalid assessments and forecast patients' future psychological states.

Artificial Neural Networks for Economic Forecasting

May.2018 - Jun.2019

Independent Research

This project compared artificial neural networks and classical models on financial time series. Specifically, fully connected and RNN with LSTM cells were used on exchange rate forecasting, which had outperformed existing ARIMA and VAR models.

Independent Reading in Mathematics: Mathematical Economics

May.2019 - Jun.2019

Supervisor: Robert J. McCann

A supervised learning program focusing on microeconomic theory with mathematical rigour. Topics included duality theory in optimization, consumer and producer theory, partial and general equilibrium, as well as market failures like adverse selection.

CIBC Machine Intelligence Hackathon

Sep.2018

Finalist Group (Top 5)

An auto-encoder-decoder architecture neural network was implemented to detect fraud in medical insurance claims.

SKILLS

Programmings Python including TensorFlow, PyTorch, Sci-kit Learn, Pandas, Numpy, and various data visualization toolkits; R; STATA; Matlab; Mathematica; Bash.

Development Server deployment on Amazon Web Services (AWS) and Google Cloud Platform (GCP).

Data Analytics & Machine Learning Solid mathematical and statistical foundations for statistical learning models. Being able to implement and deploy machine learning models for both academic purposes such as paper replication and industrial purposes.

EXTRA-CIRRICULAR

Economics Peer Mentorship Program (as Mentor)

Oct.2019 - Apr.2020

OTHER COURSES & CERTIFICATES

Coursera Practical Time Series Analysis; Machine Learning; Serverless machine learning with TensorFlow on Google cloud platform; Social and economic networks: models and analysis; Sequence models (recurrent neural networks); Mathematics for machine learning: multivariate calculus.

Nvidia Accelerated computing with CUDA python.