

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
Courses: Calculus, Linear Algebra, Real Analysis, Game Theory, Non-linear Optimization. Time Series Analysis, Econometrics, Probability, Machine Learning, Neural Networks.
Cumulative GPA: 4.00/4.00, Course Average: 95%.

Stanford University, United States *Jun. 2019 - Aug. 2019*
Summer Session, Intensive Program in Data Science
Courses: CS229:Machine Learning(Graduate), STATS202:Data Mining and Analysis(Graduate), STATS116: Theory of Probability(Undergraduate).
Cumulative GPA: 4.30/4.00¹, Course Average: 99%.

Hangzhou Foreign Languages School, China *Sep. 2014 - Jun. 2017*
Examinations: General Certificate of Education A-Level(CIE). Advanced Placement(AP).
Activities: Co-founder of HwHumans Student Platform.

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

Mc Nab Undergraduate Scholarship	<i>Dec. 2019</i>
Alexander Mackenzie Scholarship In Economics And Political Science	<i>Oct. 2019</i>
Dean's List Scholar(2018-19)	<i>Jun. 2019</i>
International Experience Award (Killam American Fund for International Exchange)	<i>May. 2019</i>
Dean's List Scholar(2017-18)	<i>Jan. 2018</i>

ACTIVITIES & PROJECTS

Thesis on Stock Market Forecasting using News Sentiment with Machine Learning
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 forecasting spot price of crude oil using news sentiments. Dataset from Ravenpack news analytics are used to construct daily sentimental measures for crude oil market. Data

⁰Resume compile date: 11:28 Tuesday 14th January, 2020

¹Stanford University uses a 4.00 GPA system, that is, courses with A gives 4.00 GPA. However, courses with A+ grades are counted as 4.30.

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

Programming Skills 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.

RECENT EXTRA-CIRRICULAR

Volunteer: Economics Peer Mentorship Program, as Mentor.

Oct.2019 - Apr.2020

Volunteer: University of Toronto, Representative at the Learning Abroad Fair.

Nov. 2019

Volunteer: University of Toronto, Second Year Learning Community Panel, as Panelist.

Oct. 2019

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.