Tianyu Du

Undergraduate at University of Toronto, Economics, Mathematics and Computer Science

Contacts

Phone:	+1 647-886-7951
University email	tianyu.du@mail.utoronto.ca
Personal email:	i@tianyudu.com
LinkedIn:	https://www.linkedin.com/in/tianyu-du-7a56a7155/
Personal Site:	www.TianyuDu.com
Github:	https://github.com/TianyuDu

Educations

Sep. 2017 - Jun. 2020 (Expected)
University of Toronto, Toronto, Canada.
Honours Bachelor of Science (Forth Year)
Programs Economics&Mathematics Specialist and Computer Science Minor
Current cGPA: *4.00/4.00*

Jun. 2019 - Aug. 2019
Stanford University, CA, United States.
Summer Session, Intensive Studies Program in Data Science
Courses: Machine Learning (Graduate), Data Mining and Analysis (Graduate), Theory of Probability (Undergraduate).

Sep. 2014 - Jun. 2017
Hangzhou Foreign Language School, Hangzhou, China.
General Certificate of Education, A Level by Cambridge International Examinations
Courses: Economics, Mathematics, Further Mathematics, Physics, English.
Advanced Placement
Courses: Microeconomics, Macroeconomics.

Scholarships and Awards

Jan. 2018 Dean's List Scholar (2017-18)
Jun. 2019 Dean's List Scholar (2018-19)
May. 2019 International Experience Award ($ 5,000)

Academic Activities

May. 2018 - Present.
Artificial Neural Networks in Economic Forecasting
Independent Research
Various neural networks including RNN, CNN, and hybrid models are implemented for forecasting tasks on economic time series. The accuracies of neural networks are compared with traditional models including ARIMA and VAR to demonstrate the superior performance achieved by neural networks.

May. 2019 - Jun. 2019
Independent Reading in Mathematics: Mathematical Economics
Supervisor: Robert J. McCann
Reading in microeconomic theories with rigorous mathematical proofs. Topics including consumer theory, producer theory, choice under uncertainty, adverse selection, signalling, screening, and general equilibrium theories.

Sep. 2018 CIBC Machine Intelligence Hackaton
Finalist Group (Top 5)
During this Hackaton, each team has to come up with a solution to detect fraud in medical claims. My team presented a solution using an encoder-decoder architecture neural network to catch fraud in medical insurance claims. And our team was selected as a finalist group (the top 5 groups) based on our prediction accuracy and presentation.

Research Interests

Application of Data Science on Economic Forecasting
Applying the cutting-edge techniques from computer science and data science on economics-related topics. Deep neural networks helps us build more precise and powerful models to make forecasting on cross-sectional data.

Computational Economics: Agent-Based Modelling
Modelling and simulate markets and the interaction of agents in the market using computer science techniques. Topics including simulation of perfectly and partially competitive markets, various games in game theory.

Skills

- **Python** Building and training using `pytorch`. Handle dataset with `numpy` and `pandas`, `scipy` and `sklearn`.
- **Latex** Familiar with latex including formulae and reference management.
- **R** Data analysis and visualization with R.
- **Matlab** Data manipulation, setting up and training neural nets using `Matlab`.
- **Stata** Data navigation and regression analysis with `Stata`
- **Amazon Web Service** Setting up cloud server for neural net training and web hosting.
- **Mathematica** Handling optimization problems, solving and visualizing solutions to them.
- **Linux&Bash** Operating workstations and servers running linux systems.

Certificates

Jun. 2019 Nvidia - Accelerated Computing With Cuda
Jun. 2018 Coursera - Practical Time Series Analysis
Apr. 2018 Coursera - Mathematics for Machine Learning: Multivariate Calculus
Mar. 2018 Coursera - Serverless Machine Learning with Tensorflow on Google Cloud Platform
Mar. 2018 Coursera - Recurrent neural networks
Jan. 2018 Coursera - Algorithmic Toolbox
Dec. 2017 Coursera - Social and Economic Networks: Models and Analysis
Dec. 2017 Coursera - Machine Learning