

Tianyu Du

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

CONTACTS

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EDUCATIONS

SEP. 2017 **University of Toronto**, Toronto, Canada.
- JUN. 2020 Honours Bachelor of Science (Forth Year)
(Expected) PROGRAMS Economics&Mathematics Specialist and Computer Science Minor
CURRENT CGPA: 4.00/4.00

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

SEP. 2014 **Hangzhou Foreign Language School**, Hangzhou, China.
- JUN. 2017 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
MAY. 2019 International Experience Award (\$ 5,000)

ACADEMIC ACTIVITIES

MAY. 2018 Artificial Neural Networks in Economic Forecasting
- PRESENT. *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 Independent Reading in Mathematics: Mathematical Economics
- JUN. 2019 *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