Dongxu Li

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About Me

- **Technologies**: Python/PANDAS, C++, Matlab, Latex(Lyx), Git, Vim, Bash(basic)
- **Mathematics Background**: Fundamental Calculus, Linear Algebra, Numerical Method, Convex Optimization, Dynamic Programming(Reinforcement Learning)
- **Statistics Background**: Statistics Inference(Model parameters estimation and calibration), Statistics Learning
- **Finance Background**: Fixed Income Product, General Derivative Products and Portfolio Theory
- **Interests**: Hiking, Snowboarding, Swimming, Tennis, Basketball, Fencing

Education

- **Stevens Institute of Technology** Hoboken, NJ
  PhD candidate in Financial Engineering; Advisor: Steve Yang, Victor Xi Luo; GPA: 4.00 *Aug. 2018 – Present*
- **University of Michigan** Ann Arbor, MI
  Master of Science in Quantitative Finance; Advisor: Johannes Muhle-Karbe; GPA: 3.92 *Aug. 2016 – Dec. 2017*
- **Dalian University of Technology** Dalian, China
  Bachelor of Science in Information And Computational Science; GPA: 3.88 *Sep. 2012 – July. 2016*

Experience

- **Stevens Institute of Technology** Hoboken, NJ
  Research Assistant, Teaching Assistant and Lab Course Lecturer *Aug 2018 - Present*
  - **Research Assistant - Research Area**: Adaptive Agent Based Modeling of Economic System: Model the life cycle of economic agent using finite time horizon Markov Decision Process, solving the model using value iteration, writing highly efficient C++ code by taking advantage of multiprocessing and multithreading.
  - **Teaching Assistant - Stochastic Calculus for Finance II: continuous model**: Materials cover: Intro to probability models and definition of sigma algebra, martingales, Markov property, stochastic(Ito) integrals, and stochastic differential equations. General option pricing, hedging framework and interest rate models.
  - **Lab Course Lecturer: FE 522 C++ programming in Finance**: Materials cover: Fundamental concepts, syntax, data structure and control flow of C++ language, Object Oriented Programming philosophy, Monte Carlo simulation with applications on option pricing and portfolio construction.
- **Nova IQ** Edison, NJ
  AI Engineer Intern *June 2018*
  - **Base Model Building**: Built stock price database consists of all stocks in SP500. Processed data to construct training, developing, and testing datasets for machine learning algorithm. Built base deep reinforcement learning model for portfolio management. Tested the model on single stock trading.
  - **Training**: Participated in training session and helped with recruiting.

Honor and Personal Project

- **Honor**:
  - **Provost Doctoral Fellowship**: Top one percent in academic and professional pursuits
  - **WorldQuant International Quant Championship**: Stage 1 rank: 4/3000 US Region (2019)
  - **WorldQuant International Quant Championship**: Stage 2 rank: 15/200 US Region (2019)
  - **WorldQuant Challenge (2019)**: Gold Level Certificate Score: 19250, rank 218/13931, Research Consultant Job Offer
  - **Stevens High Frequency Trading Competition(Annual Event)**: Major Organizer
- **Personal Projects**: More projects on: https://dongxulee.github.io/portfolio/
  - **Stock Market Participation Probability Prediction**: Predict the probability of American households to participate in stock trading based on Panel Study of Income Dynamics survey dataset (PSID).
  - **Price Binary Option**: Two approaches to price binary option: Black Scholes Model framework approach and probability approach involving the kernel density estimation technique.
  - **Dimension Reduction on US Treasury Dataset**: Apply dimension reduction method (PCA) to capture the most variation in the original treasury data. Present a low dimension overview of entire treasury data which is easier to visualize and analyze.