

Yinbin Han

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EDUCATION

The Chinese University of Hong Kong, Shenzhen Sep 2017 – Jul 2020 (Expected)

B.S. in Applied Mathematics, School of Science and Engineering

- Overall GPA: **3.87**/4.00; Major GPA: **3.95**/4.00 (Ranked **1** among 71 students of the class)
- Relevant coursework: Calculus, Linear Algebra, Statistical Inference, Probability Theory, Stochastic Process, Real Analysis, Optimization, Data Structure

University of California, Berkeley

Jan 2020 - May 2020

Berkeley Global Access Programs

- Overall GPA: **3.925**/4.000
- Relevant coursework: Algorithm, Artificial Intelligence, Fourier Analysis and Wavelet

RESEARCH INTERESTS

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- Applied probability; stochastic modeling; stochastic control and its applications on financial engineering and service systems.

PRACTICAL EXPERIENCES

Prof. Zizhuo Wang Research Team Sep 2020 – Present

- Studied an aircraft switching problem: given two stochastic processes and two servers, based on current observation of arrival, decided whether to switch two servers to accommodate unexpected demand
- Focused on whether to switch, when to switch, and benefit of the switch
- Proved the existence of a threshold: the switch must be made if the arrival is large enough
- Established the monotonicity of the parameters such as time, arrival rate, and server capacity

Prof. Chi-Guhn Lee Research Team

May 2020 – Sep 2020

- Adapted a deep neural network to approximate value function in a discrete optimal stopping problem and applied the method to Bermudan option pricing
- Compared the simulated results to a theoretical computation from Black-Scholes Model for European option pricing to verify correctness
- Replicated a published paper's simulation; analyzed the convergence and performance of neural network; found the previous work's limitations: too strong assumption and huge sample complexity
- Created a mathematical model using dynamic programming for the optimal stock selling/buying decision in the bull/bear switching market and find each single decision through deep optimal stopping (DOS)

Shenzhen Research Institute of Big Data

Feb 2019 – Aug 2019

- Adapted deep reinforcement learning to find the optimal consecutive batch-match time interval for online ride hailing platforms
- Replicated the results of a paper published by Didi Chuxing; verify the correctness and analyzed the performance of previous method
- Created a traffic network using Python and generated passenger-driver data through a mixed Gaussian model. Organized a simulation to verify the feasibility of our method

School of Science and Engineering

Jan 2019 – May 2019

Undergraduate Student Teaching Fellows

- Instructed weekly hour-long tutorials for BIO2001 (General Biology)

PROFESSIONAL SKILLS

- Excellent mathematical modeling and analysis abilities
- Familiarity with Python, MATLAB, C++, and Java, including project experience
- Fluent in English, especially in the productive skills of writing and speaking. Educated in a fully English environment

AWARDS & HONORS

- China National Scholarship 2020
- Academic Performance Scholarship Class B (< 3%): academic years 2017-2018 and 2018-19
- Awarded Dean's list: academic years 2017-2018, 2018-19 and 2019-20

EXTRACURRICULAR ACTIVITIES**Student Speaker in Orientation**

Sep 2020

- Delivered an on-campus speech as a student representative for an orientation

Summer Program with Tsinghua Yao Class

Jul 2019

- Visited the Turing AI Institute of Nanjing, the Yangtze Delta Region Institute, Lufax, Huawei, and Alibaba and learned the notions of quantum computing, smart cities, and AI applications

Standing Committee

Sep 2018 – Apr 2019

Leader of Draft Section

- Led draft section in Standing Committee of Student Union responsible for drafting regulation

Member, Student Congress of CUHK, Shenzhen

Sep 2017 – Apr 2019

- Drafted, discussed, and voted for proposals from student representative