YAN SANG

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EDUCATION

NEW YORK UNIVERSITY New York, NY
The Courant Institute of Mathematical Sciences
M.S. in Mathematics in Finance (expected-Dec 2022)

- ***Coursework:*** dynamic & nonlinear derivatives pricing, advanced risk and portfolio management, stochastic calculus (Girsanov, Feynman-Kac), OOP in Java, Python in finance (tailored machine learning, scientific computing, model selection, simulations and validations), fixed income, capital and credit derivatives, SVA, energy derivatives, financial alternative data

UNIVERSITY OF HONG KONG Hong Kong
B.S. in Mathematics (Sep 2017-Aug 2021)

- ***Coursework:*** operations research, Markov chain, scientific computing, combinatorics, measure theory, algorithm analysis, numerical analysis, functional & complex analysis, orchestral music, new media & social media, Cantonese
- ***Honors & Awards:*** Dean's List, Prof. Yung-Chow Wong scholarship (given to 2 students), Alan John Ellis Prize in Mathematics, Dr. Lee Shau Kee scholarship

EXPERIENCE

HONG KONG EDUCATIONAL PUBLISHING COMPANY Hong Kong
Editorial Assistant (Aug 2020)

- Contributed to compiling various math teaching materials for Hong Kong secondary schools
- Diagnosed and created layered toolkits tailored for clients based on existing literature
- Communicated efficiently in Cantonese (with colleagues all from Hong Kong)

UNIVERSITY OF HONG KONG Hong Kong
Student Teaching Assistant (Fall 2018)

- Organized revision sessions and answered questions both online and offline for a fundamental calculus course of more than 200 students
- Designed over 60 supplementary exercise problems covering the core 11 modules

PROJECTS

PEKING UNIVERSITY HSBC BUSINESS SCHOOL Shenzhen, China
CAPM in Investment and Portfolio Management (Apr 2021) – ***MATLAB***

- Initiated a pool of diversified stocks to outperform HSI by 32%, 23% and 1% in test periods
- Articulated reflections per methodologies beyond CAPM, fundamental and technical analysis

UNIVERSITY OF HONG KONG Hong Kong
An Overview of Information Theory (Fall 2020)

- Researched universal portfolio algorithm and maximum entropy applications in finance
- Familiarized with Faster-than-Nyquist on top of knowledge in entropy, data compression and transmission, Fourier transform, pulse shaping and the Nyquist-Shannon theorem

A Study of Optimal Transport (Summer 2019)

- Applied Katyusha (a primal-only stochastic gradient descent method) as an optimal transport solver to accelerate by $O(\sqrt{n})$, largely proved in theory
- Researched recent advances (greedy descent and randomization) in solving the primal-dual optimal transport and improvements in classical ones (multiloop and double pivoting)

Sums of Triangular Numbers, Square Numbers and Modular Forms (Summer 2018)

- Drafted certain relationship between integral solutions of triangular and square numbers
- Achieved insights in modular forms, Einstein series and elliptical curves after self-studied basics of abstract algebra and complex analysis

COMPUTATIONAL SKILLS/OTHER

Programming Languages: Python, Java, MATLAB, LaTeX
Languages: Mandarin (native), English (fluent), Cantonese (good), Japanese (basic)