Zixiang Zhou

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Education

***Columbia University in the City of New York*, New York, NY** 2016 - 2020

Bachelor of Arts in Mathematics
Bachelor of Arts in Computer Science

***University of Southern California* , Los Angeles, CA** 2021 - Present

Ph.D Candidate in Pure Mathematics with specialization in Analysis and PDEs
PhD Advisor: Shanghua Teng
Research Assistantship Funded by Simon Foundation

Awards/Honors:
Columbia Merit Scholarship
Columbia Departmental Honor in Mathematics
USC Dornsife Graduate Fellowship
USC Computer Science Department Research Assistanship
Citadel Data Globl Championship Finalist, 15 out 7000+ Teams

Relevant Courseworks:
Analysis of Algorithm, Data Structures and Algorithm Analysis, Advanced Programming in C/C++, Database, Machine Learning, Graduate Probability Theory, Stochastic Process, Stochastic Partial Differential Equations

Work Experience

USC CS department, Los Angeles, CA Jun 2022 - Present
Research Assistant

- Formulated Quantum Information Revelation inspired by word-guess puzzles to obtain information complexity
- Stimulated Information Revelation using LSTM model with cross-attention module and adapative sampling techniques
- Adapted various PDEs arising from fluid dynamics and geometric problems to undertake generative tasks using optimal transport framework

Xmachine Capital, New York, NY Jun 2018 - Aug 2018
Research Intern

- Managed a large database of the hourly price of major cryptocurrencies and updated the database using self-designed web-scrapper targeting on specific exchange markets
- Tuned parameters in trading algorithms based on the large deviation theory using statistical machine learning and signal processing and improved high-frequency trading strategies by eliminating useless alpha factors

Columbia University - Department of Mathematics, New York, NY Feb 2016 - Dec 2019
Teaching and Research Assistant

- Investigated on Minikowski Problems and Optimal Transport Problems arised from Monge-Ampere Equaiton and its regularity
- Designed numerical algorithms that simulate the decay of heat operator in stochastic heat PDEs and related equations
- Graded weekly homework and held office hours for real analysis, fourier analysis, and abstract algebra

Skills and Interests

Languages: English (Native), Chinese (Native), Japanese (Elementary)
Programming: Python, Java, C++, LATEX
Interest: Akiddo, Brazilian Jiujitsu, Powerlifting, Marathon