HAOSHENG ZHOU

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EDUCATION

University of California, Santa Barbara (UCSB), PSTAT Department
PhD Candidate in Applied Probability and Mathematical Statistics; GPA: 4.0/4.0   Sep 2022 - Present

New York University (NYU), CIMS (Courant Institute)
Master in Mathematics; GPA: 3.86/4.0   Sep 2020 – May 2022

Peking University (PKU), EECS Department
Bachelor in Data Science and Big Data Technology (IT Finance); GPA: 3.57/4.0   Sep 2016 – Jul 2020

PUBLICATIONS AND PREPRINTS

[7] H. Zhou, D. Ralston, X. Yang, R. Hu: *Adversarial Decision-Making in Partially Observable Multi-Agent Systems: A Sequential Hypothesis Testing Approach.* In preparation (2025).

[6] R. Hu, H. Zhou, M. Zhou, *Solving Mean Field Games: Algorithm Design and Convergence Analysis of Actor-Critic-Score Flow.* In preparation (2025).

[5] R. Hu, J. Long, H. Zhou: *Finite-Agent Stochastic Differential Games on Large Graphs: II. Machine Learning Algorithms.* In preparation (2025).

[4] H. Zhou, D. Ralston, X. Yang, R. Hu: *Integrating Sequential Hypothesis Testing into Adversarial Games: A Sun Zi-Inspired Framework.* arXiv preprint arXiv:2502.13462 (2025).

[3] R. Hu, J. Long, H. Zhou: *Finite-Agent Stochastic Differential Games on Large Graphs: I. The Linear-Quadratic Case.* arXiv preprint arXiv:2406.09523 (2024).

[2] H. Zhou, W. Lin, S.R. Labra, S.A. Lipton, J.A. Elman, N.J. Schork, A.V. Rangan: *Detecting Boolean Asymmetric Relationships with a Loop Counting Technique and its Implications for Analyzing Heterogeneity within Gene Expression Datasets.* **IEEE/ACM Transactions on Computational Biology and Bioinformatics** (2024).

[1] H. Zhou, J. Tu, Y. Kong: *Approximation Algorithms and PTAS of the Minimum Dominating Set and the 3-Path Vertex Cover Problem on Unit Disk Graph.* Bachelor Thesis (2020).

INVITED TALKS/LECTURES

Jul 2025: SIAM Conference on Financial Mathematics and Engineering (SIAM FM 25), Miami, Florida.

Mar 2025: Western Conference on Mathematical Finance (WCMF 12), Los Angeles, California.

Feb 2025: CFMAR Graduate Student Research Lightning Talk at UCSB, Santa Barbara, California.

Jan 2025: Guest lecture on PyTorch at UCSB MATH 260L, Santa Barbara, California.

Nov 2024: Banff International Research Station (BIRS) Workshop: *Modeling, Learning and Understanding: Modern Challenges between Financial Mathematics, Financial Technology and Financial Economics*, Alberta, Canada.

Oct 2024: INFORMS Annual Meeting 2024, Seattle, Washington.

Jul 2024: Summer School: *Optimal Transport through Midwest*, Madison, Wisconsin.

Nov 2023: CFMAR Graduate Student Research Lightning Talk at UCSB, Santa Barbara, California.

MEMBERSHIP AND SERVICE

Referee for Peer-Reviewed Journals: *Digital Finance.*

Feb 2025: Organizer of CFMAR Graduate Student Research Lightning Talk at UCSB, Santa Barbara, California.

Jan 2024 - Jun 2024: Organizer of Reinforcement Learning Student Seminar at UCSB, Santa Barbara, California.

MENTORING

Sep 2024 - Mar 2025: CFMAR Undergraduate Lab Mentor at UCSB, *Topic: Financial Data Generation with Score-Based Diffusion Models*, Santa Barbara, California.

HONORS AND AWARDS

Jan 2024: UCSB Abraham Wald Memorial Prize.

Sep 2022: UCSB Amazon Fellowship.

Sep 2021: NYU GSAS Students for the Pathways to the PhD Program.

May 2019: PKU Academic Excellence Award.

May 2018: PKU Academic Excellence Award.

May 2018: PKU Scholarship for Outstanding Undergraduates.

ACADEMIC ACTIVITIES

Jul 2025: SIAM Conference on Financial Mathematics and Engineering (SIAM FM 25), Miami, Florida.

Apr 2025: Simons Laufer Mathematical Sciences Institute (SLMath) Workshop: *Detection, Estimation, and Reconstruction in Networks*, Oakland, California.

Mar 2025: Western Conference on Mathematical Finance (WCMF 12), Los Angeles, California.

Nov 2024: Banff International Research Station (BIRS) Workshop: *Modeling, Learning and Understanding: Modern Challenges between Financial Mathematics, Financial Technology and Financial Economics*, Alberta, Canada.

Oct 2024: INFORMS Annual Meeting 2024, Seattle, Washington.

Jul 2024: Summer School: *Optimal Transport through Midwest*, Madison, Wisconsin.

Feb 2024: Institute for Mathematical and Statistical Innovation (IMSI) Workshop: *Decision Making and Uncertainty*, Chicago, Illinois.

May 2022: Pacific Institute for the Mathematical Sciences-Centre de Recherches Mathématiques (PIMS-CRM) Probability Summer School at UBC, Vancouver, Canada.

May 2019: Dean's Undergraduate Research Fund (DURF) Project at NYU Shanghai, Shanghai, China.

TEACHING EXPERIENCES

TA experience in UCSB: PSTAT 213ABC (Year 2024 & 2025), PSTAT 160A/120AB/170, etc.

TA experience in NYU: MATH-UA 009 (Winter 2022).

VOLUNTEER

Oct 2015: Volunteer Teacher, Hong Village, Anhui, China.