Zihao Hu

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Research Focus

Operations Research, Machine Learning Theory, Online Decision Making, Riemannian Optimization

Academic Positions

- **Hong Kong University of Science and Technology** — Hong Kong SAR, China
  Research Assistant Professor, Department of Mathematics — *Jul. 2024 - Present*
- **Hong Kong University of Science and Technology** — Hong Kong SAR, China
  Postdoctoral Researcher, Department of Mathematics; Host: Yuan Yao and Jiheng Zhang — *Apr. 2024 - Jun. 2024*

Education

- **Georgia Institute of Technology** — Atlanta, USA
  Ph.D. in Machine Learning; Advisor: Jacob Abernethy — *Aug. 2018 - Dec. 2023*
- **Shanghai Jiao Tong University** — Shanghai, China
  M.S. in Computer Science; Advisor: Hongtao Lu; GPA: 3.89/4.00, Rank: 3/115 — *Mar. 2018*
- **Huazhong University of Science and Technology** — Wuhan, China
  BSEE in Telecommunications; GPA: 84.55/100 — *June 2015*

Publications

- Yanjun Han, Zhengqing Zhou, **Zihao Hu**, Jose Blanchet, Peter W. Glynn, Yinyu Ye, Zhengyuan Zhou. Sequential Batch Learning in Finite-Action Linear Contextual Bandits. Operations Research, to appear.
- **Zihao Hu**, Xiaoyu Fan, Yuan Yao, Jiheng Zhang, Zhengyuan Zhou. Learning to Bid in Non-Stationary Repeated First-Price Auctions. Operations Research, Minor Revision.
- Guanghui Wang, **Zihao Hu**, Claudio Gentile, Vidya Muthukumar, Jacob Abernethy. Faster Margin Maximization Rates for Generic and Adversarially Robust Optimization Methods. Mathematical Programming 2025, Series B.
- **Zihao Hu**, Guanghui Wang, Xi Wang, Andre Wibisono, Jacob Abernethy, Molei Tao. Extragradient Type Methods for Riemannian Variational Inequality Problems. arXiv: 2309.14155. Accepted by International Conference on Artificial Intelligence and Statistics (AISTATS) 2024.
- **Zihao Hu**, Guanghui Wang, Jacob Abernethy. On Riemannian Projection-free Online Learning. Conference on Neural Information Processing Systems (NeurIPS) 2023.
- Guanghui Wang, **Zihao Hu**, Vidya Muthukumar, Jacob Abernethy. Faster Margin Maximization Rates for Generic Optimization Methods. Conference on Neural Information Processing Systems (NeurIPS) 2023. (Spotlight)
- **Zihao Hu**, Guanghui Wang, Jacob Abernethy. Minimizing Dynamic Regret on Geodesic Metric Spaces. Annual Conference on Learning Theory (COLT) 2023.
- Guanghui Wang, **Zihao Hu**, Vidya Muthukumar, Jacob Abernethy. Adaptive Oracle-Efficient Online Learning. Conference on Neural Information Processing Systems (NeurIPS) 2022.
- **Zihao Hu**, Junxuan Chen, Hongtao Lu, Tongzhen Zhang. Bayesian Supervised Hashing. Conference on Computer Vision and Pattern Recognition (CVPR) 2017. (Spotlight, 8%)
- Wei Shen, Xiang Bai, **Zihao Hu**, Zhijiang Zhang. Multiple Instance Subspace Learning via Partial Random Projection Tree for Local Reflection Symmetry in Natural Images. Pattern Recognition (PR) 2016.

Preprints

- **Zihao Hu**, Yuan Yao, Jiheng Zhang, Zhengyuan Zhou. Dynamic Regret for Non-Stationary Linear Bandits via Misspecification Reductions. arXiv:2607.02891, 2026.
- **Zihao Hu**, Yuxiao Wen, Yuan Yao, Jiheng Zhang, Zhengyuan Zhou. Learning to Bid with Unknown Private Values in Budget-Constrained First-Price Auctions. arXiv:2605.09448, 2026.

Research Grants

- **Principal Investigator**: Adaptive Learning for Online Ad Display in Non-stationary Environments. HKD 828,792. Hong Kong Research Grants Council, General Research Fund. Project No. 16506225, Oct. 2025–Sep. 2028.

Honors and Awards

- National Scholarship 2017, Shanghai Jiao Tong University, Shanghai, China (Top 2.6%, 3/115)
- Two Sigma Financial Modeling Challenge 2017, Kaggle (Top 7.15%, 148/2070)
- First Prize in China Post-Graduate Mathematical Contest in Modeling 2016 (Top 1.69%, 150/8872)

Academic Service

- **Journal Reviewer**: Mathematics of Operations Research (MOR); IEEE Transactions on Automatic Control (TAC)
- **Conference Reviewer**: NeurIPS, ICML, Conference on Learning Theory (COLT), Algorithmic Learning Theory (ALT), AISTATS

Skills Summary

- **Languages**: C, C++, Python, Shell Script
- **Tools**: Linux, Git, Mathematica, Matlab