Pingbang Hu

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Research Interest

- **Machine Learning**
  Data-Centric AI, Trustworthy Machine Learning, Statistical Learning Theory, Manifold and Graph Learning
- **Theoretical Computer Science**
  Learning Theory, Fast Graph Algorithm, Approximation Algorithm

Education

- **University of Illinois Urbana-Champaign** — **Illinois**
  Ph.D. Candidate in Information Science, School of Information Science — *Aug. 2023–Present*
  - **Advisor**: Jiaqi Ma
- **University of Illinois Urbana-Champaign** — **Illinois**
  M.S. in Applied Mathematics, College of Liberal Arts & Sciences — *Aug. 2023–Aug. 2025*
  - **Concentration**: Optimization and Algorithms
- **University of Michigan** — **Michigan**
  B.S. in Computer Science with **Summa Cum Laude**, *College of Engineering* — *Aug. 2021–May 2023*
  - **Minor**: Mathematics, College of Literature, Science, and the Arts
- **Shanghai Jiao Tong University** — **Shanghai, China**
  B.E. in Electrical and Computer Engineering, UM-SJTU Joint Institute — *Aug. 2019–Aug. 2023*
  - **Minor**: Computer Science, UM-SJTU Joint Institute

Research and Industry Experience

- **Deep Learning Research, Susquehanna International Group** — **Pennsylvania**
  Machine Learning Ph.D. Intern — *(Incoming) June 2026–Aug. 2026*
- **Alignment Science Team, Anthropic** — **San Francisco**
  AI Safety Research Fellows — *Jan. 2026–May 2026*
- **AWS AI Lab, Amazon** — **New York**
  Applied Scientist Intern — *May 2025–Aug. 2025*
- **Sugiyama Laboratory, National Institute of Informatics** — **Tokyo, Japan**
  Research Intern — *May 2024–Aug. 2024*
  - **Advisor**: Mahito Sugiyama
- **SURE Program, University of Michigan** — **Michigan**
  Undergraduate Researcher — *May 2022–Apr. 2023*
  - **Advisor**: Wei Hu

Peer-Reviewed Conference Publications

(* denotes equal contribution)

[C1] **Pingbang Hu**, Mahito Sugiyama, "Pseudo-Nonlinear Data Augmentation: A Constrained Energy Minimization Viewpoint". In *Proceedings of the 14th International Conference on Learning Representations* (ICLR 2026)

[C2] **Pingbang Hu**, Joseph Melkonian, Weijing Tang, Han Zhao, Jiaqi W. Ma, "GRASS: Scalable Data Attribution with Gradient Sparsification and Sparse Projection". In *Proceedings of the 39th Advances in Neural Information Processing Systems* (NeurIPS 2025)

[C3] Yiwen Tu*, **Pingbang Hu***, Jiaqi W. Ma, "A Reliable Cryptographic Framework for Empirical Machine Unlearning Evaluation". In *Proceedings of the 39th Advances in Neural Information Processing Systems* (NeurIPS 2025)

[C4] Xinhe Wang, **Pingbang Hu**, Junwei Deng, Jiaqi W. Ma, "Adversarial Attacks on Data Attribution". In *Proceedings of the 13th International Conference on Learning Representations* (ICLR 2025)

[C5] Yuzheng Hu, **Pingbang Hu**, Han Zhao, Jiaqi W. Ma, "Most Influential Subset Selection: Challenges, Promises, and Beyond". In *Proceedings of the 38th Advances in Neural Information Processing Systems* (NeurIPS 2024)

[C6] Junwei Deng*, Ting-Wei Li*, Shiyuan Zhang, Yijun Pan, Hao Huang, Xinhe Wang, **Pingbang Hu**, Xingjian Zhang, Jiaqi W. Ma, "`dattri`: A Library for Efficient Data Attribution". In *Proceedings of the 38th Advances in Neural Information Processing Systems Datasets and Benchmarks Track* (NeurIPS 2024) (**Spotlight**)

Pre-prints and Technical Reports

(* denotes equal contribution)

[P1] **Pingbang Hu**, Yuzheng Hu, Jiaqi W. Ma, Han Zhao, "A Unified Theory of Random Projection for Influence Functions". *Preprint*

[P2] Junwei Deng*, Yuzheng Hu*, **Pingbang Hu***, Ting-Wei Li*, Shixuan Liu*, et al., "A Survey of Data Attribution: Methods, Applications, and Evaluation in the Era of Generative AI". *Preprint*

[T1] **Pingbang Hu**, "Travel the Same Path: A Novel TSP Solving Strategy". *Technical Report*

Teaching Experience

- **Graduate Teaching Assistant, University of Illinois Urbana-Champaign** — **Illinois**
  Hold discussion and office hours weekly, design assignments and exam problems, grade and guide projects.
  - **Network Analysis**: A graduate-level course on the M.S. IS track. — *Spring 2025, Spring 2026*
- **Instructional Aide, University of Michigan** — **Michigan**
  Hold discussion and office hours weekly, design assignments and exam problems, grade and guide projects.
  - **Introduction to Cryptography**: An upper-level course on the main undergraduate CS track. — *Winter 2023*
  - **Randomness and Computation**: A graduate-level course on the M.S. CS theory track. — *Fall 2022*
- **Teaching Assistant, Shanghai Jiao Tong University** — **Shanghai, China**
  Hold discussion and office hours weekly, design and grade assignments and exams.
  - **Honor Mathematics III**: An undergraduate-level course on the main B.Eng. ECE track. — *Summer 2021*
    - **Competition**: Hold the 1st UM-SJTU JIntegration Bee competition.
  - **Honor Mathematics II**: An undergraduate-level course on the main B.Eng. ECE track. — *Fall 2020*

Honors and Awards

- **Anthropic AI Safety Research Fellowship** — **San Francisco**
  Fellows (32 out of 2000+ applicants worldwide) for AI Safety Research at Anthropic — *Oct. 2025*
- **Graduate Conference Travel Award** — **Illinois**
  Graduate College's Competition at University of Illinois Urbana-Champaign — *Nov. 2024*
- **NeurIPS 2024 Scholar Award** — **British Columbia, Canada**
  Financial Aid Award for NeurIPS 2024 — *Oct. 2024*
- **Excellent Internship Award** — **Tokyo, Japan**
  Excellent (best) internship evaluation at National Institute of Informatics — *Aug. 2024*
- **Hong Kong, Macao and Taiwan Overseas Chinese Student Scholarship** — **Shanghai, China**
  First Prize (Ranked #2) among all HK, MC, and TW students at Shanghai Jiao Tong University — *Oct. 2021*
- **Undergraduate Excellent Scholarship** — **Shanghai, China**
  Third Prize among all students at UM-SJTU Joint Institute — *Nov. 2020*
- **Bao Gang Excellent Scholarship** — **Shanghai, China**
  Second Prize (Ranked #3) among all Taiwan students at Shanghai Jiao Tong University — *June 2020*
- **Hong Kong, Macao and Taiwan Overseas Chinese Student Scholarship** — **Shanghai, China**
  First Prize (Ranked #1) among all HK, MC, and TW students at UM-SJTU Joint Institute — *Dec. 2019*

Professional Service

- **Program Committee**
  AAAI 2025
- **Conference Reviewer**
  ICML 2026, ICLR 2026, NeurIPS 2025, ICLR 2025, ICML 2024, IEEE BigData 2023
- **Journal Reviewer**
  TMLR