Ziang Niu

Applied Mathematics Master Student

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Education

University of Pennsylvania (Philadelphia, PA), M.A. in Applied Mathematics, 2023 (expected).
Research Advisor: Eugene Katsevich and Bhaswar B. Bhattacharya.

Renmin University of China (Beijing, China), B.A. in Statistics, 2021.
Thesis Advisor: Wei Li.

Experience

Student academic research

Master student researcher, University of Pennsylvania (2021–2023).
I developed novel theory and methodology for (conditional) independence testing and high-dimensional inference problems. See [3, **?**, **?**].

Undergraduate student researcher, Renmin University of China, (2020–2021).
I designed, studied theoretically, and implemented a two-stage framework to conduct the causal inference for high-dimensional treatment allowing for unobserved confounding. See [2].

Undergraduate student researcher, University of College London, (2020–2021).
I proposed a novel method to boost the inference for intractable likelihood models with the Quasi-Monte Carlo method. See [1].

Fellowship and Awards

- SIAM Annual Meeting Student Travel Award (2021).
- Undergraduate Study Scholarship (2017-2019).

Professional Service Activities

- *Reviewer*, NeurIPS, Journal of Machine Learning Research.

Presentations

Invited Seminar Presentations

- *High-dimensional causal inference: estimation and inference for high-dimensional treatment in the presence of unobserved confounding.*
  Data Mining Center of Renmin University of China, May. 28, 2021.

Contributed Conference Oral Presentations

- *Estimation and inference for high-dimensional nonparametric additive instrumental-variables regression.*
  Chinese R Conference, Nov. 20–21, 2021, in Beijing, China.
  ICSA-Canada Chapter Symposium, Jul. 8–10, 2022, in Banff, Canada. [Slides]

Conference Poster Presentations

- *Discrepancy-based Inference for Intractable Generative Models using Quasi-Monte Carlo.*
  Lifting Inference with Kernel Embeddings, Jan. 10–14, 2022, online. [Video] [Slides]
  SIAM Annual Meeting, Jul. 19–23, 2021, online. [Poster]
  Paris AI Summer School, Jul. 5–9, 2021, online.

Mentorship

- Vikram Balasubramanian
  Directed Reading Program, UPenn, Sep.–Dec., 2022.
- Alexandru Lopotenco
  Undergraduate Research in Probability and Statistics, UPenn, Jan.–May., 2022.
- Ryan Jeong
  Undergraduate Research in Probability and Statistics, UPenn, Jan.–May., 2022.

Publications and Preprints

[1] **Z. Niu***, J. Meier*[1], and F-X. Briol. Discrepancy-based Inference for Intractable Generative Models using Quasi-Monte Carlo. *Electronic Journal of Statistics*, in revision, 2022+. Available on https://arxiv.org/abs/2106.11561.

[2] **Z. Niu**, Y. Gu, W. Li. Estimation and inference for high-dimensional nonparametric additive instrumental-variables regression. In submission, 2022+. Available on https://arxiv.org/abs/2204.00111.

[3] S. Mukherjee, **Z. Niu**, S. Halder, B. B. Bhattacharya, G. Michailidis. High Dimensional Logistic Regression Under Network Dependence. In submission, 2022+. Available on https://arxiv.org/abs/2110.03200.

Last updated: November 15, 2022

[1] * stands for equal contribution