Ruiyi Yang

CONTACT INFORMATION
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EDUCATION

University of Chicago, Chicago, IL. Sep 2017–Jun 2022 (expected)

- Ph.D. in Computational and Applied Mathematics. GPA: 3.90/4.0
  - Advisor: Daniel Sanz-Alonso.
  - Research interests: Bayesian inverse problems, Gaussian processes, graph-based machine learning, nonparametric statistics.
  - Thesis: Graph Matérn Fields with Applications in Inverse Problems and Machine Learning.

University of California, Los Angeles, Los Angeles, CA. Sep 2013–Jun 2017

- B.S. in Mathematics. GPA: 3.89/4.0
  - College Honors Program.
  - Departmental Highest Honor.
  - Magna Cum Laude.

PUBLICATIONS AND PREPRINTS

(Authors are ordered alphabetically in all papers.)

1. D. Sanz-Alonso and R. Yang. Finite element representations of Gaussian fields: Balancing numerical and statistical accuracy. *To appear in SIAM/ASA Journal on Uncertainty Quantification*, 2022. Preprint available at https://arxiv.org/abs/2109.02777.
2. B. Aragam and R. Yang. Uniform consistency in nonparametric mixture models. *Submitted*, 2021. Preprint available at https://arxiv.org/abs/2108.14003.
3. D. Sanz-Alonso and R. Yang. Unlabeled data help in graph-based semi-supervised learning: A Bayesian nonparametrics perspective. *To appear in Journal of Machine Learning Research*, 2022. Preprint available at https://arxiv.org/abs/2008.11809.
4. D. Sanz-Alonso and R. Yang. The SPDE approach to Matérn fields: Graph representations. *To appear in Statistical Science*, 2022. Preprint available at https://arxiv.org/abs/2004.08000.
5. J. Harlim, D. Sanz-Alonso, and R. Yang. Kernel methods for Bayesian elliptic inverse problems on manifolds. *SIAM/ASA Journal on Uncertainty Quantification* 8(4), 1414-1445, 2020.
6. N. García Trillos, D. Sanz-Alonso, and R. Yang. Local regularization of noisy point clouds: Improved global geometric estimates and data analysis. *Journal of Machine Learning Research*, 20(136):1–37, 2019.

AWARDS

- Harper Dissertation Fellowship, University of Chicago. 2021
  In recognition of record or achievement and professional promise, one of University of Chicago's highest honors.
- Travel Award, SIAM Conference on Computational Science and Engineering. 2021
- Travel Award, SIAM Conference on Mathematics of Data Science. 2020
- Travel Award, GTDAML Graduate Student Conference. 2019

TALKS

- Matérn Gaussian Fields on Graphs: Theory and Applications. Aug 2021
  Joint Statistical Meetings.
  Topic-contributed Session: "Algorithms for Threat Detection" (Virtual).
- Graph-Based Methods for Bayesian Elliptic Inverse Problems on Manifold. Mar 2021
  SIAM Conference on Computational Science and Engineering.
  Minisymposium: "Data-Driven Scientific Computing" (Virtual).
- Graph-Based Approximation of Matérn Gaussian Fields. Feb 2021
  University of Wisconsin-Madison Statistics Seminar (Virtual).

- Graph-Based Methods for Inverse Problems on Manifolds and Point Clouds. Jun 2020
  SIAM Conference on Mathematics of Data Science.
  Minisymposium: "Bridging Data Assimilation with Data-driven analysis" (Virtual).
- Local Regularization of Noisy Point Clouds. Jun 2019
  GTDAML Graduate Student Conference, The Ohio State University.

Teaching Experience

- University of Chicago Guest Lecturer
  - CAAM 31440: Applied Analysis. Fall 2021
- University of Chicago Teaching Assistant
  - CAAM 31440: Applied Analysis. Fall 2021
  - CAAM 31210: Applied Functional Analysis. Fall 2018, 2019, Winter 2021, 2022
  - STAT 24300: Numerical Linear Algebra. Fall 2020
  - CAAM 31511: Monte Carlo Simulation. Spring 2020
  - STAT 31700: Introduction to Probability Models. Winter 2020
  - CAAM 31450: Applied Partial Differential Equations. Spring 2019
  - CAAM 31220: Partial Differential Equations. Winter 2019

Skills

Matlab, Python, R.