Ruiyi Yang

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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. *Submitted*, 2021. 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. *Submitted*, 2021. 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*, 2021+. 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).

- Graph-Based Learning.   Oct 2019
  CCAM RTG Student Seminar, University of Chicago.

- Local Regularization of Noisy Point Clouds.   Jun 2019
  GTDAML Graduate Student Conference, The Ohio State University.

- Option Pricing.   Oct 2018
  CCAM RTG Student Seminar, University of Chicago.

- Particle-Laden Flows on an Incline.   Feb 2018
  CCAM RTG Student Seminar, University of Chicago.

TEACHING EXPERIENCE

- University of Chicago Teaching Assistant

  - CAAM 31210: Applied Functional Analysis.   Fall 2018, Fall 2019, Winter 2021
  - 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.