

## Ruiyi Yang

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| EDUCATION | <b>University of Chicago</b> , Chicago, IL. | Sep 2017–Jun 2022 (expected) |
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- 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 (Authors are ordered alphabetically in all papers.)  
AND  
PREPRINTS 1. D. Sanz-Alonso and R. Yang. Finite element re

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.

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| AWARDS | <ul style="list-style-type: none"><li>• Harper Dissertation Fellowship, University of Chicago. 2021<br/><i>In recognition of record or achievement and professional promise, one of University of Chicago's highest honors.</i></li></ul> |
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- 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

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| TALKS | <ul style="list-style-type: none"> <li>• Matérn Gaussian Fields on Graphs: Theory and Applications. Aug 2021<br/>Joint Statistical Meetings.</li> <li>Topic-contributed Session: “Algorithms for Threat Detection” (Virtual).</li> </ul> |
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- 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, 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.