

Ruiyi Yang

CONTACT INFORMATION	Fine Hall 215, Washington Road Princeton University, Princeton, NJ 08544.	E-mail: ry8311@princeton.edu Website: https://ruiyiyang.github.io
POSITION	Princeton University , Princeton, NJ. <ul style="list-style-type: none">• Postdoctoral Research Associate, Program in Applied and Computational Mathematics. Supervisor: Amit Singer.	Aug 2022–present
EDUCATION	University of Chicago , Chicago, IL. <ul style="list-style-type: none">• Ph.D. in Computational and Applied Mathematics. Advisor: Daniel Sanz-Alonso. University of California, Los Angeles , Los Angeles, CA. <ul style="list-style-type: none">• B.S. in Mathematics. College Honors Program.	Sep 2017–Jun 2022 Sep 2013–Jun 2017
PUBLICATIONS AND PREPRINTS	(Authors are ordered alphabetically in all papers.) <ol style="list-style-type: none">1. Hwanwoo Kim, Daniel Sanz-Alonso, and Ruiyi Yang. Optimization on Manifolds via Graph Gaussian Processes. <i>Submitted</i>, 2022. Preprint available at https://arxiv.org/abs/2210.10962.2. Nicolás García Trillos, Daniel Sanz-Alonso, and Ruiyi Yang. Mathematical Foundations of Graph-Based Bayesian Semi-Supervised Learning. <i>To appear in Notices of the American Mathematical Society</i>, 2022. Preprint available at https://arxiv.org/abs/2207.01093.3. Daniel Sanz-Alonso and Ruiyi Yang. Finite element representations of Gaussian fields: Balancing numerical and statistical accuracy. <i>To appear in SIAM/ASA Journal on Uncertainty Quantification</i>, 2022. Preprint available at https://arxiv.org/abs/2109.02777.4. Bryon Aragam and Ruiyi Yang. Uniform consistency in nonparametric mixture models. <i>Submitted</i>, 2021. Preprint available at https://arxiv.org/abs/2108.14003.5. Daniel Sanz-Alonso and Ruiyi Yang. Unlabeled data help in graph-based semi-supervised learning: A Bayesian nonparametrics perspective. <i>Journal of Machine Learning Research</i>, 23(97):1-28, 2022.6. Daniel Sanz-Alonso and Ruiyi Yang. The SPDE approach to Matérn fields: Graph representations. <i>Statistical Science</i>, 37(4):519-540, 2022.7. John Harlim, Daniel Sanz-Alonso, and Ruiyi Yang. Kernel methods for Bayesian elliptic inverse problems on manifolds. <i>SIAM/ASA Journal on Uncertainty Quantification</i>, 8(4), 1414-1445, 2020.8. Nicolás García Trillos, Daniel Sanz-Alonso, and Ruiyi Yang. Local regularization of noisy point clouds: Improved global geometric estimates and data analysis. <i>Journal of Machine Learning Research</i>, 20(136):1-37, 2019.	
AWARDS	<ul style="list-style-type: none">• Travel Award, SIAM Conference on Uncertainty Quantification• Harper Dissertation Fellowship, University of Chicago. <i>In recognition of record or achievement and professional promise, one of University of Chicago's highest honors.</i>• Travel Award, SIAM Conference on Computational Science and Engineering.• Travel Award, SIAM Conference on Mathematics of Data Science.• Travel Award, GTDAML Graduate Student Conference.	2022 2021 2021 2020 2019

TALKS	<ul style="list-style-type: none"> • Unlabeled Data Help in Graph-Based Bayesian Semi-Supervised Learning. SIAM Conference on Mathematics of Data Science, San Diego CA. Sep 2022 Minisymposium: “Graph-Based Methods in Low-Label Rate Machine Learning”. • Graph-Based Approximation of Matérn Gaussian Fields. IMSI Workshop on Expressing and Exploiting Structure in Modeling, Theory, and Computation with Gaussian Processes, Chicago IL. Aug 2022 • Balancing Numerical and Statistical Accuracy in the SPDE Approach to Gaussian Processes. SIAM Conference on Uncertainty Quantification, Atlanta GA. Apr 2022 Minisymposium: “New Developments in Gaussian Processes”. • Matérn Gaussian Fields on Graphs: Theory and Applications. Joint Statistical Meetings (Virtual). Aug 2021 Topic-contributed Session: “Algorithms for Threat Detection”. • Graph-Based Methods for Bayesian Elliptic Inverse Problems on Manifold. SIAM Conference on Computational Science and Engineering (Virtual). Mar 2021 Minisymposium: “Data-Driven Scientific Computing”. • Graph-Based Approximation of Matérn Gaussian Fields. University of Wisconsin-Madison Statistics Seminar (Virtual). Feb 2021 • Graph-Based Methods for Inverse Problems on Manifolds and Point Clouds. SIAM Conference on Mathematics of Data Science (Virtual). Jun 2020 Minisymposium: “Bridging Data Assimilation with Data-driven analysis”. • Local Regularization of Noisy Point Clouds. GTDAML Graduate Student Conference, The Ohio State University. Jun 2019
TEACHING EXPERIENCE	<ul style="list-style-type: none"> • 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, 2022 – 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.