Wenjun Zhao

Contact Information

Courant Institute of Mathematical Sciences
Department of Mathematics
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Employment

Division of Applied Mathematics, Brown University

LFZ Assistant Professor of Applied Mathematics, July 2021-June 2024

Education

Courant Institute of Mathematical Sciences, New York University

M.Phil. , Atmosphere Ocean Science & Mathematics, Jan 2021
Ph.D. , Atmosphere Ocean Science & Mathematics, May 2021

- Advisor: Professor Esteban G. Tabak

School of the Gifted Young, University of Science and Technology of China

B.S. in Information and Computational Sciences, June 2016

- Advisor: Professor Yu-Hong Dai (Chinese Academy of Sciences)

Internship & Visiting

Argonne National Laboratory, Mathematics and Computer Science Dept.

Wallace Givens Associate, June–Aug. 2020

- Mentor: Dr. Hong Zhang

University of Oxford, Department of Computer Science

Visiting student, May–Sept. 2015

- Mentor: Professor Alessandro Abate

Additional Training

Science Communications Workshop, Aruthur L. Carter Journalism Institute, New York University, New York, USA. (Oct 2019)

NASA JPL-Caltech Summer School: Using Satellite Observations to Advance Climate Models, Pasadena, USA. (Aug 2018)

Research Interests

Optimal transport and its applications; Data analysis; Scientific machine learning; Theoretical and computational fluid dynamics.

Publications

Zhang, H. & Zhao, W., *PNODE: An Integrated Neural ODE Framework based on Discrete Adjoint Solvers*, submitted.

Zhao, W. *Sample-based Optimal Transport in Statistical Data analysis*, PhD Thesis.

Tabak, E.G., Trigila, G. & Zhao, W., *Distributional barycenter problem through data-driven flows*, submitted.

Tabak, E.G., Trigila, G. & Zhao, W., *Conditional density estimation and simulation through optimal transport.* Machine Learning (2020). https://doi.org/10.1007/s10994-019-05866-3.

Tabak, E.G., Trigila, G. & Zhao, W., *Data Driven Conditional Optimal Transport.* 33*rd* Conference on Neural Information Processing Systems (NeurIPS) OTML Workshop (2019). https://arxiv.org/abs/1910.11422

Conferences & Workshops

Conditional optimal transport and its applications (Talk), Physical Applied Mathematics and Data Science, ShanghaiTech University, Shanghai, China. (Jan 2020)

Data Driven Conditional Optimal Transport (Poster), NeurIPS Optimal Transport in Machine Learning Workshop, Vancouver, Canada. (Dec 2019)

Seminar Talks

Barycentric Optimal Transport: algorithms and applications, CAOS student seminar, New York University. (Nov 2020)

Advanced Neural ODE Solver through PETSc, Summer Argonne Students' Symposium 2020, Argonne National Laboratory. (Apr 2020)

Conditional optimal transport and its applications, CAOS student seminar, New York University. (Nov 2019)

A simplified entrainment model based on shallow water equation, CAOS student seminar, New York University. (Nov 2018)

Conditional density estimation through optimal transport, CAOS student seminar, New York University. (Dec 2017)

Teaching Experience

Spring	2021	Recitation leader, Intro to Fluid Dynamics, Complex Variables	NYU
Fall	2020	Grader, Linear Algebra for Data Science	NYU
Spring	2020	Recitation leader, Introduction to Math Modeling	NYU
Fall	2019	Recitation leader, Introduction to Math Modeling	NYU
Spring	2019	Recitation leader, Ordinary Differential Equations	NYU
Fall	2018	Substitute lecturer/Grader, Partial Differential Equations	NYU
Fall	2015	Teaching assistant, Multivariable Calculus	USTC

Honors and Awards

2020	Nomination for Dean's Dissertation Fellowship, NYU
2019	NeurIPS travel award
2019	Moses A. Greenfield Research Prize, NYU Courant
2016–now	Henry MacCracken Fellowship, NYU
2015	Summer research fellowship at University of Oxford
2015	Meritorious Winner in Mathematical Contest of Modeling
2013	First prize in USTC Contest of Electromagnetics
2012–2016	China National Encouragement Scholarship

Relevant Skills

Programming:	C, Java, MATLAB, Python, Mathematica, LaTeX
Languages:	Mandarin (fluent), Japanese (familiarity)

Professional Associations

Nominee member, American Mathematical Society (AMS)
Regular member, Association for Women in Mathematics (AWM)
Student member, Society for Industrial and Applied Mathematics (SIAM)
Science Alliance Member, The New York Academy of Sciences (NYAS)