Yifan Jiang

yifan.jiang@maths.ox.ac.uk • https://yifanjiang233.github.io

EDUCATION

University of Oxford, Oxford, United Kingdom — Sep 2021 – Present
- DPhil student in Mathematics of Random Systems
- Under the supervision of Prof. Jan Obłój and Prof. Gui-Qiang Chen

Fudan University, Shanghai, China — Sep 2016 – Jul 2020
- BSc in Mathematics and Applied Mathematics

The University of Texas at Austin, Austin, United States of America — Aug 2018 – Dec 2018
- Study abroad in Mathematics

RESEARCH INTERESTS

- Stochastic control, optimal transport, mathematical finance
- Fluid dynamics, scalar conservation laws, mean-field systems

PUBLICATIONS

[1] Wasserstein distributional robustness of neural networks
with X. Bai, G. He and J. Obłój, *Advances in Neural Information Processing Systems*, 2023.

[2] Empirical approximation to invariant measures for McKean–Vlasov processes: mean-field interaction vs self-interaction
with K. Du and J. Li, *Bernoulli*, 2023, vol. 29(3), 2492-2518.

[3] Existence and distributional chaos of points that are recurrent but not Banach recurrent
with X. Tian, *Journal of Dynamics and Differential Equations*, 2022.

[4] Convergence of the Deep BSDE method for FBSDEs with non-Lipschitz coefficients
with J. Li, *Probability, Uncertainty and Quantitative Risk*, 2021, vol. 6(4), 391-408.

PREPRINTS

[5] Sensitivity of causal distributionally robust optimization
with J. Obłój, arXiv:2408.17109, 2024.

[6] The *anytime* convergence of stochastic gradient descent with momentum: from a continuous -time perspective
with Y. Feng, T. Wang, and Z. Ying, arXiv:2310.19598, 2024.

[7] Duality of causal distributionally robust optimization: the discrete-time case
arXiv:2401.16556, 2024.

[8] Sequential propagation of chaos
with K. Du and X. Li, arXiv:2301.09913, 2023.

AWARDS & HONORS

- Travel Award for Young Researchers at the 12th Bachelier World Congress — Jul 2024
- Finalists of Alibaba Global Mathematics Competition (10th out of 50k+) — Jun 2022
- Oxford-Radcliffe Graduate Scholarship (4-year full scholarship) — May 2021
- Putnam Mathematical Competition top 3% — Dec 2018
- Samsung Scholarship at Fudan University (the first prize) — Oct 2017

RESEARCH EXPERIENCE

Research Assistant, Fudan University — Aug 2020 – Aug 2021

- Under the supervision of Prof. Shanjian Tang and Dr. Kai Du
- Stochastic control, forward-backward SDEs, neural networks

Undergraduate Researcher, Fudan University — Mar 2019 – Mar 2020

- Under the supervision of Prof. Xueting Tian
- Topological dynamical systems, chaos, ergodic measures

TEACHING EXPERIENCE

Teaching Assistant, University of Oxford

- B8.1 Probability, Measure, and Martingales — Michaelmas Term 2023
- B8.1 Probability, Measure, and Martingales — Michaelmas Term 2022
- MCF Advanced Numerical Methods — Hilary Term 2022

Tutor, University of Oxford

- C4.9 Optimal Transport and Partial Differential Equations — Michaelmas Term 2023
- B8.3 Mathematical Models of Financial Derivatives — Hilary Term 2023

SELECTED TALKS

- *Sensitivity of causal distributionally robust optimization* — Sep 2024
  Berlin-Oxford Summer School in Mathematics of Random Systems
  Oxford, United Kingdom
- *Sensitivity of causal distributionally robust optimization* — Jul 2024
  12th Bachelier World Congress of the Bachelier Finance Society
  Rio de Janeiro, Brazil
- *Wasserstein distributional robustness of neural networks* — Apr 2024
  Oxford–Princetno Workshop on Financial Mathematics and Stochastic Analysis
  Princeton, United States of America
- *Duality of causal distributionally robust optimization: the discrete-time case* — Apr 2024
  Oxford–ETH Workshop on Mathematical & Computational Finance
  Zurich, Switzerland
- *Causal distributionally robust optimization – duality and sensitivity* — Feb 2024
  Imperial College Mathematical Finance Seminar
  London, United Kingdom
- *Causal distributionally robust optimization – sensitivity and duality* — Sep 2023
  CIRM: Advances in Stochastic Analysis for Handling Risks in Finance and Insurance
  Marseille, France
- *Sensitivity of robust optimization over an adapted Wasserstein ambiguity set* — Sep 2022
  London–Oxford–Warwick Mathematical Finance Workshop
  Oxford, United Kingdom

ATTENDED WORKSHOPS

- Clay Research Conference and Workshops — Sep 2023
  Oxford, United Kingdom
- Junior Researcher in Stochastic Optimal Control **(Co-organizer)** — Sep 2023
  Berlin, Germany
- Oxford–ETH Workshop on Mathematical & Computational Finance — Jun 2023
  Oxford, United Kingdom
- Workshop on Model-free Mathematical Finance — May 2023
  London, United Kingdom
- Oxbridge PDE Conference — Mar 2023
  Cambridge, United Kingdom

- Oxford–Princeton Workshop on Stochastic Analysis and Mathematical Finance — Oct 2022
  Oxford, United Kingdom
- Mathematics of Random Systems Summer School — Sep 2022
  Oxford, United Kingdom
- Durham Symposium on Stochastic Dynamics, Nonlinear Probability, and Ergodicity — Aug 2022
  Durham, United Kingdom
- Workshop in Stability Analysis for Nonlinear PDEs — Aug 2022
  Oxford, United Kingdom
- International PDE Conference — Jul 2022
  Oxford, United Kingdom
- vICM Sectional Workshop in Applied Mathematics — Jul 2022
  London, United Kingdom

[*Updated on 2024-09-02*]