Yijun Wan

PostDoc
CEREMADE, Dauphine Université, Paris, France

email: yijun.wan@hotmail.com
Citizenship: Chinese
Languages: English (fluent), French (intermediate), Chinese (native)
Computer skills: Python, C, LaTeX

Research interests: probability, game theory, learning theory

---

Working experiences

2024-2025	**PostDoc**, CEREMADE Dauphine Université, Paris, France
2022-2023	**Research Engineer**, Mathematical and Algorithmic Sciences Laboratory, Paris Research Center, Huawei Technologies.

Education

2019-2022	**Ph.D.** under the supervision of Prof. Dmitry Chelkak at École Normale Supérieure, Paris.
2016-2019	**Normalienne** at École Normale Supérieure, Paris, France.
2017-2018	**M.Sc. 2**, Probability and random models, Sorbonne Université, Paris, France. Mention: *Très bien.*
2016-2017	**M.Sc. 1**, Mathematics, Université Paris Diderot, Paris, France. Mention: *Très bien.*
2013-2016	**B.Sc**, Mathematics, Beihang University, being selected in Hua Loo-gehng Class, Beijing, China.

Papers in probability

[1] On the convergence of massive loop-erased random walks to massive SLE(2) curves, with Dmitry Chelkak, *Electron. J. Probab.*, 26: 1-35 (2021).

[2] Capacity of the range of tree-indexed random walk, with Tianyi Bai, *Ann. Appl. Probab.*, 32(3): 1557-1589 (2022)

[3] On the crossing estimates of simple conformal loops ensembles, with Tianyi Bai, *Int. Math. Res. Not.*, 2022.

Papers in machine learning

[4] Chaotic Regularization and Heavy-Tailed Limits for Deterministic Gradient Descent.
Soon Hoe Lim, **Yijun Wan**, Umut Şimşekli, Advances in Neural Information Processing Systems Conference (**NeurIPS**), 2022.

[5] Implicit Compressibility of Overparametrized Neural Networks Trained with Heavy-Tailed SGD.
Yijun Wan, Melih Barsbey, Abdellatif Zaidi, Umut Şimşekli, International Conference on Machine Learning (**ICML**), 2024.

[6]   Federated Learning You May Communicate Less Often! Milad Sefidgaran, Romain Chor, Abdellatif Zaidi, **Yijun Wan**, International Conference on Machine Learning (**ICML**), 2024.

Research visits and schools

10/2022-12/2022	Institut des Hautes Études Scientifiques, Bures-sur-Yvette (host: Yilin Wang)
07/2022	Summer school on Statistical Physics Machine learning, Les Houches, France.
04/2022	New York University Abu Dhabi, the United Arab Emirates (host: Federico Camia)
01/2019-04/2019	Yau Mathematical Sciences Center, Tsinghua University, Beijing, China (host: Hao Wu).
2021	CRM-PIMS Summer School in Probability.
2019	Random Trees and Graphs Summer School, CIRM, Marseille, France.
2019	Probability and quantum field theory: discrete models, CFT, SLE and constructive aspects, Porquerolles, France.

Teaching

2019-2022	Teaching assistant of "Fundamental Mathematics" for CPES2 (Cycle Pluridisciplinaire d'Études Supérieures) at PSL. The course "Fundamental Mathematics" for sophomores at PSL in Science track is divided in two parts: algebra and analysis. I am in charge of the exercise sessions, which are devoted to these two parts on alternate weeks.

Talks

03/2019	The convergence of massive loop-erased random walks to massive SLE(2). Beijing.
07/2019	The convergence of massive loop-erased random walks to massive SLE(2). CIRM Luminy.
06/2021	On the crossing estimates of simple conformal loops ensembles and the scaling limits of double-dimer loop configurations. Orsay.
03/2022	Crossing estimates for simple conformal loop ensembles. Rencontre de printemps à Lyon.
04/2022	On the massive loop-erased random walks and massive SLEs. Abu Dhabi Stochastics Seminar.
06/2022	On massive perturbations of LERW, the Ising model and the dimer model. The 42nd Conference on Stochastic Processes and their Applications (SPA).
10/2022	Crossing estimates for simple conformal loops ensembles and the convergence of probabilities of topological events for the double-dimer model. Les Probas du vendredi, Jussieu.
06/2024	Blackwell Approachability Applied to Absorbing Games. Junior Game Theory Seminar, Paris.

Other professional activities

2020-	Member of the organizing committee of the quarterly conference *Les Probabilités de Demain.* This conference aims to bring together probabilists from the Paris region and give PhD students an opportunity to present their works after introductory talks given by senior researchers.