

Shuo Qin

CHERN INSTRUCTOR · BIMSA

Beijing, China

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Employment

Beijing Institute of Mathematical Sciences and Applications

CHERN INSTRUCTOR (POSTDOCTORAL APPOINTMENT)

Affiliated with the Yau Mathematical Sciences Center, Tsinghua University

Beijing

Jun. 2024 - Present

Education

New York University

PH.D. IN MATHEMATICS

- Supervisor: Prof. Pierre Tarrès
- Thesis: Reinforced Random Walks and Interacting Urns

New York & Shanghai

Sept. 2019 - Sept. 2024

Fudan University

BACHELOR OF SCIENCE IN MATHEMATICS AND APPLIED MATHEMATICS

- Thesis supervisor: Prof. Jiangang Ying

Shanghai

Sept. 2015 - Jun. 2019

Research Interest

I am interested in history-dependent stochastic systems, with an emphasis on self-interacting random walks and interacting reinforced processes.

Publications

PUBLISHED/ACCEPTED

Shuo Qin. Recurrence-Transience phase transition of the step-reinforced random walk at $1/2$. *Probability Theory and Related Fields* **194**, 485–540 (2026)

Rafik Aguech, **Shuo Qin.** How two elephants can learn from each other. *Stochastic Processes and their Applications* **201**, 105040 (2026)

Shuo Qin. Recurrence and transience of multidimensional elephant random walks. *Annals of Probability* **53**, 1049–1078 (2025)

PREPRINTS

Yuval Peres, **Shuo Qin.** Mixing times of step-reinforced random walks. *arXiv:2604.07207*. Submitted.

Yuval Peres, **Shuo Qin.** Transition probabilities of step-reinforced random walks. *arXiv:2604.07227*. Submitted.

Aditya Guha Roy, Yuval Peres, **Shuo Qin**, and Junchi Zuo. How reactive gambling can backfire: ruin probability is increasing in p , Hölder continuous in initial fortune. *arXiv:2512.10754*.

Shuo Qin, Pierre Tarrès. Continuous-time vertex-reinforced random walks on complete-like graphs. *arXiv:2311.13465*.

Shuo Qin. Interacting urn models with strong reinforcement. *arXiv:2311.13480*. Submitted.

WORK IN PROGRESS

Shuo Qin. Cover times for elephant random walks on tori. Manuscript in preparation.

Research Grants

2026-2027	Mixing times of step-reinforced random walks (2026T190815) China Postdoctoral Science Foundation, Principal Investigator	CNY 180000
2025-2027	Step-reinforced random walks on Cayley graphs (2025M773086) China Postdoctoral Science Foundation, Principal Investigator	CNY 80000

Awards and Fellowships

2025	Yeuk-Lam (Ruolin) Paper Award , BIMS
2019-2024	NYU Shanghai Doctoral Fellowship , NYU Shanghai
2019	Outstanding Graduates of Fudan University , Fudan University
2018	Taiping Life Insurance Scholarship , Fudan University
2017	Willis Towers Watson Scholarship , Fudan University

Academic Visits

Isaac Newton Institute for Mathematical Sciences PARTICIPANT OF THE PROGRAMME STOCHASTIC SYSTEMS FOR ANOMALOUS DIFFUSION	Cambridge Nov. 2024 - Dec. 2024
LPSM at Sorbonne Université VISITING STUDENT	Paris Feb. 2023 - May 2023

Invited Talks and Seminars

Jun. 2026.	Properties of Enhanced Branching Structures Workshop, IASM at Zhejiang University
Apr. 2026.	Probability Seminar, Hunan University of Science and Technology
Apr. 2026.	3rd Joint Academic Conference of Beijing-Tianjin-Hebei Mathematical Societies, Capital Normal University
Dec. 2025.	2025 IMS International Conference on Statistics and Data Science (ICSIDS), Seville, Spain
Sep. 2025.	Probability Seminar, AMSS at CAS
Apr. 2025.	Al-Khwarizmi Applied Mathematics Webinar (Online)
Mar. 2025.	Probability Seminar, Tsinghua University
Dec. 2024.	Programme on Stochastic Systems for Anomalous Diffusion, Isaac Newton Institute for Mathematical Sciences
Dec. 2024.	Probability Seminar, University of Bath
Nov. 2024.	Probability Seminar, Peking University
May 2024.	NYU Shanghai-Kyoto-Waseda Young Probabilists' Meeting, Kyoto University
Mar. 2024.	Workshop on Random Walks, Tianyuan Mathematics Research Center
Jan. 2024.	Probability and Statistical Physics Seminar, Tsinghua Sanya International Mathematics Forum
Dec. 2023.	Probability Seminar, Northeastern University at Qinhuangdao (Online)
Dec. 2023.	Yangtze River Delta Probability & Statistics Seminar, East China Normal University
Oct. 2023.	Probability Seminar, Fudan University

Teaching Experience

Instructor

Fall 2026	Reinforced Processes: Urns, Walks, and Bandits	BIMSA
Spring 2026	Convergence and Mixing Times of Markov Chains	BIMSA & Tsinghua

Teaching Assistant

Fall 2025	A Modern Introduction to Probability	Tsinghua University
Spring 2025	Ergodic Theory	Tsinghua University
Fall 2024	Introduction to p-harmonic functions	Tsinghua University
Spring 2022	Probability and Statistics	NYU Shanghai
Fall 2021	Probability and Statistics	NYU Shanghai
Spring 2021	Honors Theory of Probability	NYU Shanghai
Fall 2020	Calculus	NYU Shanghai

Grader & Tutor

Fall 2023	Probability and Statistics & Introduction to Stochastic Processes	NYU Shanghai
Spring 2023	Probability and Statistics	NYU Shanghai
Fall 2022	Calculus	NYU Shanghai
2018 - 2019	Mathematics Department Tutoring Lab	Fudan University

Academic Service

Referee: *Annals of Probability, Annals of Applied Probability, Stochastic Processes and their Applications, Advances in Applied Probability, Journal of Mathematical Physics, Chinese Annals of Mathematics (Series B).*

Seminar co-organizer: BIMSA Probability and Dynamical Systems Seminar, with Yuval Peres.

Section Manager, Frontiers of Science Award—Probability Theory and Stochastic Analysis, ICBS, 2025–2026. Co-ordinated section administration, committee communications, and award documentation.