Shuo Qin

Chern Instructor · BIMSA

Beijing, China

qinshuo@bimsa.cn | https://sites.google.com/view/shuoqin | Google Scholar

Employment

Beijing Institute of Mathematical Sciences and Applications — *Beijing*

Chern Instructor (postdoctoral appointment) — *Jun. 2024 - Present*

Affiliated with the Yau Mathematical Sciences Center, Tsinghua University

Education

New York University — *New York & Shanghai*

Ph.D. in Mathematics — *Sept. 2019 - Sept. 2024*

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

Fudan University — *Shanghai*

Bachelor of Science in Mathematics and Applied Mathematics — *Sept. 2015 - Jun. 2019*

- Thesis supervisor: Prof. Jiangang Ying

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

Shuo Qin. Homogenization of weakly reinforced Pólya urns on countable networks. *arXiv:2610.11780*.

Shuo Qin. Recurrence and range of the balanced excited random walk M(2,1,2). *arXiv:2609.30045*. Submitted.

Shuo Qin. Cover times and ranges of elephant random walks. *arXiv:2609.17264*. Submitted.

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. Survival probability in reactive gambling: monotonicity, singularity, and Hölder continuity. *arXiv:2512.10754*. Submitted.

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.

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,** BIMSA
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 *Cambridge*
Participant of the programme Stochastic systems for anomalous diffusion *Nov. 2024 - Dec. 2024*

LPSM at Sorbonne Université *Paris*
Visiting student *Feb. 2023 - May 2023*

Invited Talks and Seminars

Sep. 2026. Probability Seminar, AMSS at CAS

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 (ICSDS), 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 and Walks**	*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. Coordinated section administration, committee communications, and award documentation.