

# Shuangping Li

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CONTACT INFORMATION	Sequoia Hall, 390 Jane Stanford Way Stanford, CA 94305-4020	fifalsp@stanford.edu <a href="https://fifalsp.github.io/">https://fifalsp.github.io/</a>
EMPLOYMENT	<b>Stanford University</b> Stein Fellow in the Department of Statistics.	Sep 2022 – Present
EDUCATION	<b>Princeton University</b> Ph.D. in Program in Applied and Computational Mathematics. Advisors: Allan Sly, Emmanuel Abbe.	Sep 2017 – May 2022
	<b>University of Hong Kong</b> B.Sc. in Mathematics, First Class Honours.	Sep 2013 – Jun 2017
RESEARCH INTERESTS	Probability theory, high dimensional statistics, theory of algorithms, and theoretical machine learning.	
PREPRINTS	<b>Some Easy Optimization Problems Have the Overlap Gap Property</b> (with Tselil Schramm) arXiv:2411.01836	
	<b>Synthetic Continued Pretraining</b> (with Zitong Yang, Neil Band, Emmanuel Candès, and Tatsunori Hashimoto) arXiv:2409.07431	
	<b>Discrepancy Algorithms for the Binary Perceptron</b> (with Tselil Schramm and Kangjie Zhou) arXiv:2408.00796	
	<b>Spectral Clustering in the Gaussian Mixture Block Model</b> (with Tselil Schramm) arXiv:2305.00979	
PUBLICATIONS	<b>Binary Perceptron: Efficient Algorithms Can Find Solutions in a Rare Well-Connected Cluster</b> (with Emmanuel Abbe and Allan Sly) <i>54th ACM Symposium on the Theory of Computing</i> (STOC 2022)	
	<b>Proof of the Contiguity Conjecture and Lognormal Limit for the Symmetric Perceptron</b> (with Emmanuel Abbe and Allan Sly) <i>IEEE 62nd Symposium on Foundations of Computer Science</i> (FOCS 2022)	
	<b>Mean Field Behavior during the Big Bang Regime for Coalescing Random Walks</b> (with Jonathan Hermon, Dong Yao, and Lingfu Zhang) <i>Annals of Probability</i> , 50(5): pp. 1813–1884 (2022)	
	<b>Learning Sparse Graphons and the Generalized Kesten-Stigum Threshold</b> (with Emmanuel Abbe and Allan Sly) <i>Annals of Statistics</i> , 51(2): pp. 599-623 (2023)	
	<b>A Trace Theorem for Sobolev Spaces on the Sierpinski Gasket</b> (with Shiping Cao, Robert Strichartz, and Prem Talwai)	

*Communications on Pure and Applied Analysis*, 19(7): pp. 3901–3916 (2020)

**Computing Eigenvalues and Eigenfunctions of Schrödinger Equations Using a Model Reduction Approach** (with Zhiwen Zhang)

*Communications in Computational Physics*, 24: pp. 1073–1100 (2018)

FORTHCOMING  
DRAFTS

**Impossibility of Latent Vector Recovery in High-Dimensional Random Geometric Graphs** (with Eric Ma and Tselil Schramm)

INVITED TALKS &  
LECTURES

Stanford University Probability Seminar, Nov 2024.

AMS Fall 2024 Western Sectional Meeting, Oct 2024, UC Riverside.

2024 INFORMS Annual Meeting, Applied Probability Society Cluster, Oct 2024, Seattle.

Frontiers of Statistical Mechanics and Theoretical Computer Science, Aug 2024, Banff International Research Station.

Stochastic Networks Conference 2024, Jul 2024, KTH Royal Institute of Technology.

Workshop on Random Matrices and Applications, May 2024, ICERM.

Summer School 2024: Probability, Algorithms, and Inference, May 2024, Georgia Tech.

2024 Joint Mathematics Meetings, AMS Special Session on Thresholds in Random Structures, Jan 2024, San Francisco.

LA Probability Forum, Nov 2023, Caltech.

Northwestern University Probability Seminar, Nov 2023.

National University of Singapore Joint Statistics, Data Science & Machine Learning Seminar, Oct 2023.

Stanford University Probability Seminar, Oct 2023.

Georgia Tech Stochastics Seminar, Sep 2023.

Peking University Summer School on Probability, Jun 2023.

Stanford University Applied Math Seminar, May 2023.

Stanford University Women in Theory Forum, Apr 2023.

Duke University Applied Math and Analysis Seminar, Apr 2023.

UC Davis Probability Seminar, Feb 2023.

UC Berkeley Probability Seminar, Nov 2022.

UC Irvine Combinatorics and Probability Seminar, Oct 2022.

Stanford University Probability Seminar, Sep 2022.

NYU Student Probability Seminar, May 2022, online.

HKU Numerical Analysis Seminar, May 2022, online.

Penn Local Probability Seminar, Apr 2022.

2022 Joint Mathematics Meetings, AAAS Special Session on Stochastic Processes on Networks, Apr 2022, online.

UIC Probability and Combinatorics Seminar, Mar 2022, online.

Princeton University PACM Colloquium, Feb 2022.

LU-NU-UMN Joint Probability Seminar, Feb 2022, online.

Stanford University Statistics Seminar, Feb 2022, online.

Princeton University PACM Graduate Student Seminar, Jan 2022.

Harvard University Probabilitas Seminar, Dec 2021, online.

Northeast Probability Seminar, Nov 2021, online.  
 Random Graphs and Statistical Inference Workshop, Banff International Research Station, Aug 2021, online.  
 Columbia-Princeton Probability Day, May 2021, online.  
 Princeton University PACM Graduate Student Seminar, Apr 2021, online.  
 University of Basel Seminar in Probability Theory and Statistics, Apr 2021, online.  
 Princeton University PACM Graduate Student Seminar, Feb 2021, online.  
 Northeast Probability Seminar, Nov 2020, online.  
 Princeton University PACM Graduate Student Seminar, Nov 2019.  
 Duke University Graduate Student Probability Seminar, Oct 2019.  
 International Workshop on Inference on Graphical Models, Oct 2019, Columbia University.

PROFESSIONAL SERVICES

Organizer of Stanford Statistics Seminar: Winter 2023, Winter 2024, Summer 2024, Spring 2025.  
 Organizer of Stanford Probability Seminar: Spring 2023.  
 Reviewer for journals: Annals of Applied Probability, Communications in Mathematical Physics, Combinatorics, Probability and Computing, Electronic Journal of Probability, Journal of Physics A, Random Structures & Algorithms.  
 Reviewer for conferences: ACM-SIAM Symposium on Discrete Algorithms (SODA), International Conference on Artificial Intelligence and Statistics (AISTATS), Conference on Neural Information Processing Systems (NeurIPS).

TEACHING

**Stanford University**

STATS218 Introduction to Stochastic Processes II	Spring 2025, Instructor.
STATS117 Theory of Probability I	Spring 2025, Instructor.
STATS218 Introduction to Stochastic Processes II	Spring 2024, Instructor.
STATS317 Stochastic Processes	Winter 2024, Instructor.
STATS218 Introduction to Stochastic Processes II	Spring 2023, Instructor.
STATS116 Theory of Probability	Fall 2022, Instructor.

**Princeton University**

MAT100 Calculus Foundations	Fall 2020, Preceptor.
MAT201 Multivariable Calculus	Fall 2019, Assistant Instructor.
MAT202 Linear Algebra with Applications	Spring 2019, Assistant Instructor.