Christian Serio

CONTACT INFORMATION

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WEBSITE

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MATHEMATICAL INTERESTS

Probability theory and mathematical/statistical physics: scaling limits, universality, Gibbs measures, line ensembles, random polymers, spin systems.

EDUCATION

Stanford University (2021–present)

PhD Candidate in Mathematics
Advisor: Amir Dembo

Columbia University (2017–2021)

BA in Mathematics with Honors, summa cum laude, Phi Beta Kappa

PUBLICATIONS AND PREPRINTS

- ❑ "Scaling limit and tail bounds for a random walk model of SOS level lines," with M. Hegde and Y. H. Kim. Submitted.
- ❑ "Convergence to stationary measures for the half-space log-gamma polymer," with S. Das. Submitted.
- ❑ "Uniform convergence of Dyson Ferrari-Spohn diffusions to the Airy line ensemble," with E. Dimitrov. *Ann. Inst. H. Poincaré Probab. Statist.* 61(1): 385-402 (2025).
- ❑ "Scaling limit for line ensembles of random walks with geometric area tilts." *Electron. J. Probab.* 28: 1-14 (2023).
- ❑ "Tightness of discrete Gibbsian line ensembles." *Stoch. Process. Their Appl.* 159: 225-285 (2023).
- ❑ "Tightness of Bernoulli Gibbsian line ensembles," with E. Dimitrov, X. Fang, L. Fesser, C. Teitler, A. Wang, and W. Zhu. November 2021. *Electron. J. Probab.* 26: 1-93 (2021).

INVITED TALKS

- ❑ University of Utah, Stochastics Seminar, March 2025.
- ❑ Stanford University, Probability Seminar, October 2023.
- ❑ Columbia University, Columbia Probability Workshop, May 2023.

FELLOWSHIPS AND AWARDS

- ❑ ARCS Scholar Award, Northern California Chapter of the ARCS Foundation. Fall 2024–present.
- ❑ John Dash Van Buren Jr. Prize in Mathematics, Columbia College, April 2021. Awarded to one student for an outstanding senior thesis, "Tightness of discrete Gibbsian line ensembles."
- ❑ Van Amringe Mathematical Prize, Columbia Mathematics Department, May 2020. Awarded to the student deemed most proficient in their class in designated mathematical subjects.

ACADEMIC PROGRAMS

- ❑ Advances in Probability Theory and Interacting Particle Systems. Harvard University (Aug 26-28, 2024). Participant.
- ❑ Virginia Integrable Probability Summer School. University of Virginia (Jul 8-19, 2024). Participant.

- ❑ Universality & Integrability in KPZ. Columbia University (Mar 11-15, 2024). Participant.
- ❑ Seminar on Stochastic Processes. University of Arizona (Mar 8-11, 2023). Poster presenter.
- ❑ Random Media & Large Deviations. Courant Institute (Oct 21-24, 2022). Participant.
- ❑ University of Michigan Summer School on Random Matrices (Jun 13-24, 2022). Participant.
- ❑ Columbia University Mathematics REU, Summer 2020. Participant in Evgeni Dimitrov's "Asymptotics of Bernoulli Gibbsian line ensembles" research group.
- ❑ Columbia University Mathematics REU, Summer 2019. Participant in Kyle Hayden's "Surgery on knots and exotic phenomena in 3- and 4-manifolds" research group.

Teaching Experience

- ❑ TA at Stanford, MATH 63DM: Modern Mathematics Discrete Methods, Spring 2024
- ❑ CA at Stanford, MATH 151: Intro to Probability Theory, Winter 2024
- ❑ TA at Stanford, MATH 53: Ordinary Differential Equations, Winter 2023
- ❑ CA at Stanford, MATH 136: Stochastic Processes, Fall 2022
- ❑ CA at Stanford, MATH 158: Basic Probability and Stochastic Processes with Engineering Applications, Spring 2022
- ❑ CA at Stanford, MATH 19: Calculus I, Fall 2021
- ❑ TA at Columbia, MATH UN1201: Calculus III, Summer 2020
- ❑ TA at Columbia, MATH GU4061-4062: Intro to Modern Analysis I & II, Spring 2019–Spring 2021

Service

- ❑ Referee for *Annals of Probability*, Fall 2024–present.
- ❑ Referee for *Forum of Mathematics: Sigma*, Winter 2024–present.
- ❑ Referee for *Probability and Mathematical Physics*, Winter 2024–present.
- ❑ Organizer for Stanford Student Probability Seminar, Fall 2022–Spring 2024.
- ❑ Columbia University Mathematics REU, Summer 2021. Graduate student mentor for Carsten Chong's "Hurst index estimation under measurement errors" undergraduate research group.

References

Amir Dembo, Professor, Mathematics Department, Stanford University, `adembo@stanford.edu`.

Ivan Corwin, Professor, Mathematics Department, Columbia University, `ic2354@columbia.edu`.

Evgeni Dimitrov, Assistant Professor, Mathematics Department, University of Southern California, `edimitro@usc.edu`.