Curriculum Vitae: Yujin H. Kim

PERSONAL INFORMATION

U.S. Citizen.
Birthdate: Sep 1998
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EMPLOYMENT

Princeton University, Princeton, CA. *Sep 2026 – Present*
Postdoctoral Research Fellow.
NSF Postdoctoral Fellow, sponsored by Tom Hutchcroft.

California Institute of Technology, Pasadena, CA. *Jul 2025 – Aug 2026*
Olga Taussky and John Todd Postdoctoral Scholar.
NSF Postdoctoral Fellow, sponsored by Tom Hutchcroft.

EDUCATION

Courant Institute, NYU, New York, NY. *May 2025*
Ph.D, Mathematics.
Advised by Eyal Lubetzky and Ofer Zeitouni.

Columbia University, New York, NY. *May 2019*
Bachelor of Arts, Mathematics (with honors).
Senior thesis advised by Ivan Corwin.

PREPRINTS AND PUBLICATIONS

Preprints

1. *Multiplicative chaos from random multiplicative functions*, with H. Hu and X. Kriechbaum, preprint (arXiv).
2. *Scaling limit and tail bounds for a random walk model of SOS level lines*, with M. Hegde and C. Serio, submitted (arXiv).
3. *Absolute continuity of Gaussian and non-Gaussian multiplicative chaos measures*, with X. Kriechbaum, submitted (arXiv).

Publications

3. *KPP traveling waves in the half-space*, with J. Berestycki, C. Graham, and B. Mallein, **Communications in Mathematical Physics 406**, 275 (2025). https://doi.org/10.1007/s00220-025-05445-9
4. *The shape of the front of multidimensional branching Brownian motion*, with O. Zeitouni, **Probability Theory and Related Fields** (2025). https://doi.org/10.1007/s00440-025-01396-3
5. *On level line fluctuations of SOS surfaces above a wall*, with P. Caddeo and E. Lubetzky, **Forum of Mathematics, Sigma** 12 (2024), e91.
6. *The extremal point process of branching Brownian motion in* $\mathbb{R}^d$, with J. Berestycki, E. Lubetzky, B. Mallein, and O. Zeitouni, **Annals of Probability** 52 (2024), no. 3, 955-982.
7. *The maximum of branching Brownian motion in* $\mathbb{R}^d$, with E. Lubetzky and O. Zeitouni, **Annals of Applied Probability** 33 (2023), no. 2, 1515–1568.
8. *Lower tail of the half-space KPZ Equation*, **Stochastic Processes and their Applications** 142 (2021) 365-406.
9. *A refined conjecture for the variance of Gaussian primes across sectors*, with R.C. Chen, J. D. Lichtman, S. J. Miller, A. Shubina, S. Sweitzer, E. Waxman, E. Winsor, and J. Yang, **Experimental Mathematics**, pages 1–21, 05 2020.
10. *Spectral statistics of non-Hermitian random matrix ensembles*, with R. C. Chen, J. D. Lichtman, S. J. Miller, A. Shubina, and S. Sweitzer, **Random Matrices: Theory and Applications**, 8(2):1950005, 2019.

11. *Anomalous primes and the elliptic Korselt criterion*, with L. Babinkostova, J.C. Bahr, E. Neyman, and G. K. Taylor, **Journal of Number Theory**, 201:108–123, 2019.
12. *Lower-order biases in the second moments of Dirichlet coefficients in families of L-functions*, with M. Asada, R. C. Chen, E. Fourakis, A. Kwon, J. D. Lichtman, B. Mackall, S. J. Miller, E. Winsor, K. Winsor, J. Yang, and K. Yang, **Experimental Mathematics**, 0(0):1–26, 2021.
13. *Limiting distributions in generalized Zeckendorf decompositions*, with G. Carty, A. Gueganic, S. J. Miller, A. Shubina, S. Sweitzer, E. Winsor, and J. Yang, **The Fibonacci Quarterly**, 57(2):109–125, 2019.
14. *On orders of elliptic curves with fixed j-Invariants*, with L. Babinkostova, J.C. Bahr, E. Neyman, and G. K. Taylor, **Rose-Hulman Undergraduate Mathematics Journal**, 19(1): Article 2, 2019.

SELECTED AWARDS

NSF Mathematical Sciences Postdoctoral Research Fellowship (2025).

Junior Fellowship from Institut Mittag-Leffler (Fall 2024): for the program Random Matrices and Scaling Limits.

NSF Graduate Research Fellowship (2019).

John Dash Van Buren Jr. Prize in Mathematics (2019): awarded to one student in the graduating class of Columbia University.

TALKS AND PRESENTATIONS

- **American Institute of Mathematics (AIM)**, Workshop "Gibbsian line ensembles", Aug. 2026.
- **Institut de Mathématiques de Toulouse**, Probability Seminar, May. 2026.
- **Zurich (ETH and UZH) Probability Seminar**, Apr. 2026.
- **Southern California Probability Symposium**, Plenary Speaker, Apr. 2026.
- **University of Southern California**, Probability Seminar, Apr. 2026.
- **Vienna Probability Seminar**, Mar. 2026.
- **Duke University**, Probability Seminar, Jan. 2026.
- **UC San Diego**, Probability Seminar, Jan. 2026.
- **Duke University**, Probability Seminar, Jan. 2026.
- **Ohio State University**, Probability Seminar, Dec. 2025.
- **Banff International Research Station**, Workshop "Emerging Connections between Reaction-Diffusion, Branching Processes, and Biology", May 2025.
- **TU Darmstadt**, Spring School: Extrema of logarithmically correlated random fields and applications, Mar. 2025.
- **University of Bristol**, Mathematical Physics Seminar, Feb. 2025.
- **Institut Mittag-Leffler**, Random Matrices and Scaling Limits, Dec. 2024.
- **Lehigh University-University of Minnesota** Joint Probability Seminar, Nov. 2024.
- **Stanford University**, Probability Seminar, Sep. 2024.
- **CRM-ISM Montreal**, Probability Seminar, Sep. 2024.
- **Seoul National University**, Probability Seminar, Jun. 2024.
- **University of Chicago**, Probability and Statistical Physics Seminar, May 2024.
- **University of Pennsylvania/Temple University**, Probability Seminar, Apr. 2024.
- **Los Angeles Probability Forum**, Apr. 2024.

- **Hong Kong University of Science and Technology**, Probability Seminar, Jan. 2024.
- **KTH Royal Institute of Technology**, Probability Seminar, Dec. 2023.
- **Northeast Probability Seminar**, Nov. 2023.
- **University of Maryland**, Probability Seminar, Oct. 2023.
- **University of Oxford**, Probability Seminar, Jun. 2023.
- **Columbia University**, Columbia Probability Workshop, May 2023.
- **Brin Mathematics Research Center**, Workshop "Branching Processes and Reaction-Diffusion Equations", Mar. 2023.
- **Northeast Probability Seminar**, Nov. 2021.
- **SLMath** (formerly MSRI), Programs Associates' Short Talks, Sep. 2021.
- **Stanford University**, Student Probability Seminar, Apr. 2021.
- **Joint Mathematics Meetings**, AMS Special Session on Discrete Neural Networking, Jan. 2018 (w/ Eric Winsor).
- **Joint Mathematics Meetings**, Undergraduate Poster Session, Jan. 2018.
- **Maine-Quebec Number Theory Conference**, Oct. 2017 (w/ Shannon Sweitzer).
- **Joint Mathematics Meetings**, Undergraduate Poster Session, Jan. 2017.
- **INTEGERS Conference**, Oct. 2016.

ACADEMIC PROGRAMS

PIMS-CRM Summer School in Probability **Summer 2025**
Participant.

Banff International Research Station (BIRS) Workshop **Summer 2025**
Speaker and participant in the BIRS workshop, "Emerging Connections between Reaction–Diffusion, Branching Processes, and Biology."

TU Darmstadt Spring School **Spring 2025**
Participant and short-talk contributor at the spring school, "Extrema of logarithmically correlated random fields and applications."

Institut Mittag-Leffler **Fall 2024**
Awarded a Junior Fellowship to participate in the research program "Random Matrices and Scaling Limits" for the Fall 2024 semester.

Brin Mathematics Research Center Summer School **Summer 2024**
Participant of the summer school "PDE and Randomness." Research presented in the lecture series of Ofer Zeitouni.

Brin Mathematics Research Center Workshop **Spring 2023**
Speaker at the workshop "Branching processes and reaction-diffusion equations."

Centre de Recherches Mathématiques Workshop **Spring 2022**
Participant of the workshop "Branching systems, reaction-diffusion equations, and population models." Research presented in the talk "Limits for multidimensional BBM" by Ofer Zeitouni.

Simons Laufer Mathematical Sciences Institute (formerly MSRI) **Fall 2021**
Program associate at the MSRI for "Universality and Integrability in Random Matrix Theory and Interacting Particle Systems."

Virginia Integrable Probability Summer School **Summer 2019**
Participant.

Michigan Summer School on Random Matrices **Summer 2018**
Participant.

TEACHING EXPERIENCE

Courant Institute of Mathematical Sciences, NYU **2022 – 2025**
Recitation Leader
- MATH-UA.0240 (Combinatorics) for Lisa Marquand *Spring 2025*
- MATH-GA.1420 (Intro. To Math. Analysis II) for Aaditya Rangan *Spring 2024*
- MATH-UA.0397 (Large Deviations) for Gerard Ben Arous *Fall 2023*
- MATH-UA.0233 (Theory of Probability) for Lai-Sang Young *Spring 2023*
- MATH-UA.0233 (Theory of Probability) for Elizabeth Stepp *Fall 2022*

Grader
- MATH-GA.2110 (Linear Algebra I) for Michael Lindsey *Spring 2022*

Mathematics Department, Columbia University **2016 – 2019**
Teaching Assistant
- MATH GU4155 (Probability Theory) for Julien Dubedat *Spring 2019*
- MATH GU4042 (Modern Algebra II) for Walter Neumann *Spring 2018*
- MATH GU4042 (Modern Algebra II) for Yihang Zhu *Fall 2017*
- MATH UN2010 (Linear Algebra) for Eric Urban *Spring 2017*
- MATH UN1102 (Calculus II) for Noah Arbesfeld *Fall 2016*

SERVICE AND OUTREACH

The Boost Program **2024–2025**
Volunteer tutor/mentor for The Boost Program, a nonprofit organization that aims to help underrepresented and underprivileged teens excel in and out of the classroom.

CAS–GSAS Mentorship Program **2025**
"The program connects GSAS graduate student mentors with undergraduates in the College of Arts and Science (CAS) who plan on applying to liberal arts graduate programs. The GSAS graduate student mentors will help CAS students develop their graduate school plans, while sharing their own experiences applying to and attending graduate school in the liberal arts."

Courant Student Probability Seminar **2021–2025**
Organizer.

Courant MS and PhD Mentorship Program **2020–2025**
Volunteer mentor for beginning MS and PhD students at Courant. I assist students in connecting with potential advisors, choosing courses that align with their goals, applying to programs and fellowships, and navigating life in NYC on a limited budget.

Courant Graduate Student and Postdoc Seminar **2021– 2022**
Organizer.

MSRI Program Associates' Seminar **2021**
Organizer.

OTHER

Design: Young Adult Winner of the Reimagining Brooklyn Bridge design competition (with Shannon Hui and Kwans Kim), an international design competition by the Van Alen Institute and the New York City Council. Check out our proposal/press coverage here!