

# Jeeho Ryu

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## CONTACT INFORMATION

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Department of Mathematical Sciences  
Seoul National University

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## NATIONALITY

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Republic of Korea

## RESEARCH INTERESTS

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**Probability Theory: behavior of stochastic algorithms used in machine learning**  
Stochastic Gradient Descent  
CFR+ (Counterfactual Regret Minimization algorithm used in Poker AI)

## EDUCATION

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<b>Department of Mathematical Sciences, Seoul National University</b> Research Fellow	Seoul, Republic of Korea SEP 2025 – Present
<b>Department of Mathematical Sciences, Seoul National University</b> Ph.D. in Mathematics Advisor: Prof. Insuk Seo	Seoul, Republic of Korea SEP 2018 – AUG 2025
(Military service as a Technical Research Personnel: MAR 2022 – FEB 2025)	
<b>Department of Mathematical Sciences, Seoul National University</b> B.S. in Statistics and Mathematics	Seoul, Republic of Korea MAR 2014 – AUG 2018
<b>Seoul Science High School</b>	Seoul, Republic of Korea MAR 2011 – FEB 2014

## PUBLICATIONS AND ONGOING WORKS

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CH. Rhee, **J. Ryu** and I. Seo: Exit time analysis for Kesten's stochastic recurrence equations. *Probability Theory and Related Fields* (2026). <https://doi.org/10.1007/s00440-025-01461-x>. [link](#)

**J. Ryu**, SC. Hong, S. Ahn: Finding an NARE whose minimal nonnegative solution represents first passage quantities in the two-dimensional Brownian motion. *J. Korean Stat. Soc.*, **53**(3):637–665, 2024. [Journal link](#)

The convergence rate of Counterfactual Regret Minimization+ algorithm (with Insuk Seo and Taeyoung Noh)

## WORK ON AI PROJECTS

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<b>Collaboration with Google DeepMind</b> Structuring high-level mathematical problems into machine-readable formats for large language models	NOV 2024 – JUL 2025
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## HONORS AND GRANTS

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<b>Excellent Teaching Assistant</b> Department of Mathematical Sciences, Seoul National University	FEB 2025
<b>National Scholarship for Science and Engineering</b> Korea Student Aid Foundation	2014 – 2018

## TALKS

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[JAN 19, 2026] Probability Workshop in Korea 2026	Lahan Hotel, Jeonju, Korea
[JAN 22, 2025] Probability Workshop in Korea 2025	High1 Resort, Jeongseon, Korea
[NOV 01, 2024] The 17th HU-SNU Symposium on Mathematics	Seoul National University
[NOV 11, 2024] 2nd China-Japan-Korea Probability Workshop	Ramada, Jeju, Korea
[APR 20, 2024] 2024 KMS Spring Meeting	Daejeon Convention Center, Daejeon, Korea
[JUN 09, 2023] (Online) Stochastic Analysis & Application Research Center Seminar	KAIST, Korea

## TEACHING EXPERIENCES

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### Teaching Assistant (with recitation session)

Differential and Integral Calculus 2	Fall 2018
Calculus Practice 2	Fall 2019
Introduction to Analysis with practice 1	Spring 2020
Teaching session for Real Analysis Qualifying exam	Fall 2023

### Exam Review Assistant

Calculus 1,2	Fall 2020 – Fall 2022
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### Grading Assistant

Linear Algebra 1	Spring 2020
Mathematical Understanding for Uncertainty	Spring 2023
Mathematical Theory of Stochastic Processes (Graduate Course)	Fall 2023
Real Analysis 1 (Graduate Course)	Spring 2024
Introduction to Analysis	Fall 2024
Mathematical Understanding for Uncertainty	Spring 2025

## SCIENTIFIC VISITS

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Northwestern University, Chicago, the United States (Prof. CH. Rhee) NOV 06–NOV 24, 2022, MAY 02–18, 2023

## ATTENDED CONFERENCES

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Probability Workshop in Korea 2026	JAN 18–JAN 22, 2026
2025 KIAS Winter School Math+AI	DEC 02–DEC 05, 2025
Probability Summer School in Korea 2025	JUN 22–JUN 26, 2025
Probability Workshop in Korea 2025	JAN 19–JAN 22, 2025
Workshop on Probability and Mathematical Physics in Gimhae 2024	DEC 15–DEC 20, 2024
The 17th HU-SNU Symposium on Mathematics	NOV 01, 2024
2024 KMS Annual Meeting	OCT 24–OCT 26, 2024
2nd China-Japan-Korea Joint Probability Workshop	OCT 09–OCT 12, 2024
Bernoulli-IMS 11th World Congress in Probability and Statistics (Bochum, Germany)	AUG 12–AUG 16, 2024
Workshop on Combinatorics and Probability	JUN 27–JUN 28, 2024
2024 KMS Spring Meeting	APR 18–APR 20, 2024
Eleventh Bielefeld-SNU Joint Workshop in Mathematics	APR 08–APR 10, 2024
Probability Workshop in Korea 2024	JAN 21–JAN 24, 2024
Probability Winter School in Korea 2023	DEC 26–DEC 29, 2023
Random Interacting Systems, Scaling Limits, and Universality (Singapore)	DEC 10–DEC 22, 2023

Probability Workshop in Korea 2022

DEC 18–DEC 21, 2022

Conference in Honor of S. R. S. Varadhan's 80th Birthday

JUN 13–JUN 17, 2022

2021 Workshop on Number Theory and Probability

NOV 14–NOV 17, 2021

Bernoulli-IMS 10th World Congress in Probability and Statistics (online)

JUL 19–JUL 23, 2021

2021 KMS Spring Meeting

APR 29–APR 30, 2021