

Education

- 2024–Present **Ph.D. student in Computer Science**, *Harvard University, MA, USA*.
Advisor: Sitan Chen, Sham Kakade
- 2020–2024 **B.S. in Mathematics**, *Seoul National University, Seoul, South Korea*.
GPA: 4.23/4.30, Major GPA: 4.30/4.30

Research Interest

Generative AI, Diffusion Models

Publications

(* denotes co-first authors)

Conference

- [1] *Train for the Worst, Plan for the Best: Understanding Token Ordering in Masked Diffusions*, J. Kim*, K. Shah*, V. Kontonis, S. Kakade, S. Chen, **ICML 2025 (Oral)**, **Outstanding paper**.
- [2] *LoRA Training Provably Converges to a Low-Rank Global Minimum or It Fails Loudly (But it Probably Won't Fail)*, J. Kim, J. Kim, E. K. Ryu, **ICML 2025 (Oral)**.
- [3] *Task Diversity Shortens the ICL Plateau*, J. Kim*, S. Kwon*, J. Choi, J. Park, J. Cho, J. D. Lee, E. K. Ryu, **TMLR**.
- [4] *Optimal Acceleration for Minimax and Fixed-Point Problems is Not Unique*, T. Yoon, J. Kim, J. J. Suh, E. K. Ryu, **ICML 2024 (Spotlight)**.
- [5] *Time-Reversed Dissipation Induces Duality Between Minimizing Gradient Norm and Function Value*, J. Kim, A. Ozdaglar, C. Park, E. K. Ryu, **NeurIPS 2023**.

Preprint

- [6] *Selective Underfitting in Diffusion Models*, K. Song*, J. Kim*, S. Chen, Y. Du, S. Kakade, V. Sitzmann **Under review at ICLR 2026**
- [7] *Fine-Tuning Masked Diffusion for Provable Self-Correction*, J. Kim*, S. Kim*, T. Lee*, D. Z. Pan, H. Kim, S. Kakade, S. Chen, **Under review at ICLR 2026**.
- [8] *Any-Order Flexible Length Masked Diffusion*, J. Kim*, L. Cheuk-Kit*, C. Domingo-Enrich, Y. Du, S. Kakade, T. Ngatiaoco, S. Chen, M. Albergo **Under review at ICLR 2026**.
- [9] *Delta Velocity Rectified Flow for Text-to-Image Editing*, G. Beaudouin, M. Li, J. Kim, S. Yoon, M. Wang, **Under review at AAAI 2026**.
- [10] *Mirror Duality in Convex Optimization*, J. Kim, C. Park, A. Ozdaglar, J. Diakonikolas, E. K. Ryu, **Under review at SiOPT**.

Experience

- 2022–2024 **Research Intern**, under Ernest Ryu, *Seoul National University*.
◦ Worked on optimization theory
- 2023 Summer **Research Intern**, under Asuman Ozdaglar, *MIT (remote)*.
◦ Worked on optimization theory

Awards

- 2025 **Outstanding Paper Award**, ICML 2025.
◦ Top 6 papers among 15,000 submissions
- 2021 **3rd Place**, Simon Marais Mathematics Competition.
◦ Mathematics competition for university students in Asia
- 2020, 2021 **Gold Medal**, Korean Undergraduate Mathematics Competition.
◦ Mathematics competition for university students in Korea
- 2020–2023 **Presidential Science Scholarship**, Korea Student Aid Foundation.
◦ 8k in annual financial support
- 2019 **Silver Medal (11th Place)**, Romanian Masters of Mathematics.
◦ International mathematics competition for pre-university students
- 2018–2019 **Korean Finalist for the International Mathematical Olympiad (IMO)**.
◦ Final-round students (13 students)

Teaching experiences

- 2025 Fall Computational Optimal Transport (CS2840), *Harvard University*
- 2024 Spring Machine Learning Theory, *Seoul National University*
- 2022 Fall Mathematical Foundation of Deep Neural Networks, *Seoul National University*

Activities

- 2025–Present Vice President of the Harvard Graduate Korean Society, *Harvard University*
- 2022–2023 Vice President of the Global Leadership Program, *Seoul National University*
- 2021–2022 Vice President of the Student Association in the Department of Mathematics, *Seoul National University*

Languages

- English **Fluent**
- Korean **Native**