

SEHYUN JI | Curriculum Vitae

Website: <https://www.math.uchicago.edu/~jise/>

Email: jise0624@uchicago.edu

Research Interest PDEs, Kinetic equations, Fluid dynamics, Integro-differential equations, Regularity estimate and formation of singularity

Education **University of Chicago** Sep 2020 - Jun 2026 (Expected)
Ph.D. in Mathematics
Advisor: Prof. Luis Silvestre

Seoul National University Mar 2014 - Aug 2020
B.S. in Mathematics, Summa cum laude

Publication *Implosion in kinetic equations (Work in progress).*

Dissipation estimates of the Fisher information for the Landau equation(2024). [arxiv] Submitted.

Bounds for the optimal constant of the Bakry-Émery Γ_2 criterion inequality for RP^{d-1} (2024). [arxiv] Submitted.

Global Existence for an Isotropic Landau Model, with David Bowman (2024). [arxiv]. SIAM J. Math. Anal. 57 (2025), no. 2, 1406–1451.

Local regularity for the space-homogeneous Landau equation with very soft potentials, with Francois Golse, Cyril Imbert, and Alexis Vasseur. [arxiv] J. Evol. Equ. 24 (2024), no. 4, Paper No. 82, 81 pp.

Entropy dissipation estimates for the Landau equation with Coulomb potentials. [arxiv] Kinet. Relat. Models 18 (2025), no. 3, 368–388.

Awards Amick Fellowship, University of Chicago 2020-2024

The Korean Government Scholarship Program for Study Overseas 2020-2022

The Presidential Science Scholarship (Korea Student Aid Foundation) 2014-2019

University Students Contest of Mathematics (Korea), Gold award 2017, 2019

54th International Mathematical Olympiad, Gold medal 2013

Talks The dissipation estimate of the Fisher information for the Landau equation

- HADES, UC Berkeley Oct 2025
- Analysis seminar, UT Austin Sep 2025
- KDCM seminar, Yonsei University May 2025
- Workshop on Kinetic Theory and Fluids (Poster), UW Madison Mar 2025
- AMS 2025 Spring Sectional Southeastern meeting, Clemson Univ. Mar 2025
- APP seminar, Korea Institute for Advanced Study Nov 2024

The isotropic Landau equation does not blow up

- Analysis seminar, UT Austin May 2024

Teaching experience Lecturer, University of Chicago

- Math 13100, Elementary Calculus 1 Autumn 2022

	• Math 13200, Elementary Calculus 2	Winter 2023
	• Math 15100, Calculus 1	Autumn 2023
	• Math 15200, Calculus 2	Autumn 2025
	College Fellow (TA), University of Chicago	
	• Math 27000, Basic Complex Variables	Autumn 2021
	• Math 27100, Measure and Integration	Winter 2022
	• Math 27500, Basic Theory of PDEs	Spring 2022
	Grader, University of Chicago	
	• Math 31200, Analysis 1	Autumn 2024, 2025
	• Math 31400, Analysis 3	Spring 2024, 2025
	Mentor, University of Chicago	
	• REU Program	Summer 2021
	• Directed Reading Program (DRP)	Winter 2023, Spring 2024
Miscellaneous	Citizenship : South Korea	
	Languages : Korean (Mothertongue), English (Fluent)	
	Mandatory Military Service : Republic of Korea Air Force	Feb 2017 - Feb 2019