

# Hanul Jeon

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## Education

### Ph.D.

Cornell University, Advisor: Justin Moore and James Walsh

Mathematics

Aug 2021 – May 2026 (Expected)

### Visiting Scholar

Vienna University of Technology, Supervisor: Juan P. Aguilera

Jan 2025 – Jul 2025

### M.Sc.

Seoul National University, Advisor: Otto van Koert

Mathematics

Thesis: Constructive Ackermann's interpretation

Mar 2017 – Feb 2021

### B.Sc.

Sungkyunkwan University

Mathematics

Mar 2013 – Feb 2017

## Experience

### Republic of Korea Air Force

Compulsory military service

Aug 2017 – Jul 2019

## Publications

- [1] Kinkar Ch Das, Han-ul Jeon, and Nenad Trinajstić. “Comparison between the Wiener index and the Zagreb indices and the eccentric connectivity index for trees”. In: *Discrete Applied Mathematics* 171 (2014), pp. 35–41.
- [2] Hanul Jeon. “Constructive Ackermann's interpretation”. In: *Annals of Pure and Applied Logic* 173.5 (2022), p. 103086.
- [3] Hanul Jeon and Richard Matthews. “Very large set axioms over constructive set theories”. In: *The Bulletin of Symbolic Logic* 30.4 (2024), pp. 455–535.
- [4] Hanul Jeon. “On Separating Wholeness Axioms”. To appear in: *Journal of Symbolic Logic*.
- [5] Hanul Jeon. “The proof-theoretic strength of Constructive Second-order set theories”. In: *Notre Dame Journal of Formal Logic* 66.3 (2025), pp. 413–431.
- [6] Hanul Jeon and James Walsh. *Generalized ordinal analysis and reflection principles in set theory*. 2023. arXiv: 2312.12859 [math.LO].
- [7] Hanul Jeon. *The behavior of higher proof theory I: Case  $\Sigma_2^1$* . 2024. arXiv: 2406.03801 [math.LO].
- [8] Hanul Jeon. “On a cofinal Reinhardt embedding without Powerset”. In: *Fundamenta Mathematicae* 270.2 (2025), pp. 177–200.
- [9] Hanul Jeon. *Proof-theoretic dilator and intermediate pointclasses*. 2025. arXiv: 2501.11220 [math.LO].
- [10] Hanul Jeon. *Martin's measurable dilator*. 2025. arXiv: 2503.12713 [math.LO].
- [11] Hanul Jeon et al. *Ranking theories via encoded  $\beta$ -models*. 2025. arXiv: 2503.20470 [math.LO].

## Teaching Experiences

### Grader

Mathematical Logic

Fall 2024

### Grader

History of Mathematics

Spring 2023

### Grader

Applied logic

Fall 2023

<b>Grader</b>	<i>Introduction to Analysis</i>	<i>Spring 2023</i>
<b>Grader</b>	<i>Mathematical Logic</i>	<i>Fall 2022</i>
<b>Tutor</b>	<i>Sublime Learning Community Tutoring</i>	<i>Spring, Summer, Fall 2020</i>
	Covered Mathematics and its practice (Spring 2020) and Mathematics for biological scientists (Summer 2020, Fall 2020).	
<b>Grader</b>	<i>Mathematics for ecologists</i>	<i>Fall 2020</i>
<b>Teaching Assistant and Grader</b>	<i>Advanced Mathematics and its practice II.</i>	<i>Fall 2020</i>
	Equivalent to Multivariable Calculus Honors. Managed students' presentation.	
<b>Teaching Assistant and Grader</b>	<i>Logic and Set theory</i>	<i>Spring 2020</i>
<b>Teaching Assistant and Grader</b>	<i>Mathematics and its practice II.</i>	<i>Fall 2019, Summer 2020, Winter 2020</i>
	Equivalent to Multivariable Calculus. Managed an exercise course.	
<b>Teaching Assistant and Grader</b>	<i>Mathematics and its practice I.</i>	<i>Spring 2017, Spring 2019</i>
	Equivalent to Calculus. Managed an exercise course.	
<b>Tutor</b>	<i>Sunkyun Tutoring for Advanced Algebra</i>	<i>Spring 2016</i>
	Covered Chapters 4 and 5 of Hungerford's <i>Algebra</i>	

## Grants and Fellowships

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<b>Hutchinson Fellowship 2024–2025:</b>	<i>Fall 2025</i>
<b>OeAD Ernst Mach Grant:</b> 6,250 EUR	<i>Feb 2025 – Jul 2025</i>
<b>Cornell Research Travel Grant:</b> 1100 USD (for Austrian visit)	<i>Oct 2024</i>
<b>The National Scholarship for Science and Engineering:</b>	<i>Mar 2013 - Dec 2016</i>

## Talks

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<b>On proof-theoretic dilator and Pohlers' characteristic ordinals</b>	<b>Universität Wien</b>
<i>Reverse Mathematics and Higher Computability Theory Workshop</i>	<i>July 2025</i>
<b>Dilators in Descriptive set theory</b>	<b>TU Wien</b>
<i>TU Wien Computational Logic Seminar</i>	<i>April 2025</i>
<b>On proof-theoretic dilator and Pohlers' characteristic ordinals</b>	<b>Changwon University</b>
<i>4th Korea Logic day</i>	<i>January 2025</i>
<b>On a cofinal Reinhardt embedding without Powerset</b>	<b>CUNY Graduate Center</b>
<i>CUNY Set theory seminar</i>	<i>October 2024</i>
<b>On Separating Wholeness Axioms</b>	<b>Iowa State University</b>
<i>2024 North American ASL Annual Meeting</i>	<i>May 2024</i>
<b>Proof theory for higher pointclasses</b>	<b>University of Pennsylvania</b>
<i>UPenn Logic and Computation Seminar</i>	<i>April 2024</i>
<b>On Separating Wholeness Axioms</b>	<b>Virtual</b>
<i>3rd Korean Logic Day</i>	<i>Jan 2024</i>
<b>On Separating Wholeness Axioms</b>	<b>Cornell University</b>
<i>Cornell Logic Seminar</i>	<i>May 2023</i>
<b>Very large set axioms over constructive set theories</b>	<b>Cornell University</b>
<i>Cornell Logic Seminar</i>	<i>Apr 2022</i>
<b>Consequences of the axiom of choice</b>	<b>Cornell University</b>
<i>Olivetti Club</i>	<i>Mar 2022</i>

**Goodstein's theorem**  
*Madmathematics Seminar*

**What is forcing?**  
*Madmathematics Seminar*

**A Short introduction to mathematical logic**  
*Madmathematics Seminar*

**Seoul National University**  
*Oct 2016*

**Seoul National University**  
*Nov 2015*

**Sogang University**  
*Jan 2014*