

Hongyu Zhu

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EDUCATION **University of Wisconsin-Madison**

Ph. D., Mathematics, Sep. 2022–expected May 2027.

University of California, Los Angeles

B. S., Mathematics, Sep. 2019–June 2022, conferred June 10, 2022.
With Specialization in Computing, Summa Cum Laude, College Honors,
Departmental Highest Honors.
M. A., Mathematics, conferred June 10, 2022.
Departmental Scholars Program.

RESEARCH INTERESTS Mathematical Logic: Computable Model Theory, Computability Theory, Model Theory, Proof Theory.

- PUBLICATIONS AND PREPRINTS
- [1] Uri Andrews, David Gonzalez, Steffen Lempp, Dino Rossegger, and Hongyu Zhu. “The Borel complexity of the class of models of first-order theories”. In: *Proc. Amer. Math. Soc.* 153 (2025), pp. 4013–4024. DOI: [10.1090/proc/17308](https://doi.org/10.1090/proc/17308).
 - [2] Dominic Flocco, Bryce Palmer-Toy, Ruixiao Wang, Hongyu Zhu, Rishi Sonthalia, Junyuan Lin, Andrea L. Bertozzi, and P. Jeffrey Brantingham. *An Analysis of COVID-19 Knowledge Graph Construction and Applications*. 2021. arXiv: [2110.04932](https://arxiv.org/abs/2110.04932) [[cs.SI](https://arxiv.org/abs/2110.04932)]. The 5th Workshop on Graph Techniques for Adversarial Activity Analytics.
 - [3] Hongyu Zhu. *A Complete Bounded Theory with Unbounded Types*. Submitted. 2026. DOI: [10.48550/arXiv.2602.22398](https://doi.org/10.48550/arXiv.2602.22398). arXiv: [2602.22398](https://arxiv.org/abs/2602.22398) [[math.LO](https://arxiv.org/abs/2602.22398)]. URL: <https://arxiv.org/abs/2602.22398>.

- SELECTED TALKS
- *The Borel Complexity of the Class of Models of First-order Theories*. Contributed talk at 2025 ASL North American Annual Meeting, New Mexico State University, May 14, 2025.
 - *Survey on Vaught’s Conjecture*. Specialty Exam (given at the Logic Seminar), UW-Madison, October 8, 2024.
 - *Measuring Time with Fuses: What You Can and Cannot Prove*. AMS Student Chapter Seminar (Donut Seminar), UW-Madison, March 14, 2024.
 - *Are We Talking about the Same Natural Number(s)?* The 23rd Graduate Student Conference in Logic, University of Illinois Chicago, April 15, 2023.

WORK EXPERIENCE AND SERVICE	Spring 2026	Mentor for Directed Reading Program at UW-Madison (Project: Ramsey Theory)
	Fall 2025–Summer 2026	UW Foundation Graduate Student Fellowship
	Summer 2025	Project Assistant for WES Calculus Project at UW-Madison
	Spring 2025	Instructor (Lecturer Student Assistant) for Math 113 (Trigonometry) at UW-Madison
	Fall 2024	Teaching Assistant for Math 321 (Applied Mathematical Analysis) at UW-Madison
	Fall 2024–Spring 2025	Member of Committee on TA Policies and Procedures (CTAPP) at UW-Madison
	Summer 2024	Instructor (Lecturer Student Assistant) for Math 234 (Calculus–Functions of Several Variables) at UW-Madison
	Spring 2024	Co-organizer of the 24th Graduate Student Conference in Logic (GSCL)
	Fall 2023–Spring 2024	Co-organizer of Graduate Logic Seminar at UW-Madison
	Fall 2023–Spring 2024	Teaching Assistant for Math 340 (Linear Algebra) at UW-Madison
	Spring 2023	Teaching Assistant for Math 221 (Calculus and Analytic Geometry I) at UW-Madison
	Fall 2022	Teaching Assistant for Math 222 (Calculus and Analytic Geometry II) at UW-Madison
	Fall 2022–Spring 2024	Co-organizer of Madison Math Circle, UW-Madison
	Fall 2021–Spring 2022	Lead Instructor (Beginner 2) at UCLA Olga Radko Endowed Math Circle (ORMC)
	Summer 2021	Knowledge Graph Project at UCLA Applied Math REU
Spring 2021	Assistant Instructor (Advanced 2) at UCLA Olga Radko Endowed Math Circle (ORMC)	
HONORS AND AWARDS	Fall 2025–Summer 2026	UW Foundation Graduate Student Fellowship, UW-Madison
	May 2024	Early Excellence TA Award, UW-Madison Department of Mathematics.
RELEVANT SKILLS	Programming: Java, C++, Python, \LaTeX	