Matthew Harrison Hamil

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SUMMARY AND OBJECTIVE

I am a PhD mathematician and J.J. Sylvester Assistant Professor at Johns Hopkins University with experience conducting independent and collaborative research projects resulting in peer-reviewed publications, teaching, programming, and growing experience in data analysis with applied problem solving. I am seeking to transition from academia to a role where I can apply quantitative thinking to real-world challenges.

EDUCATION

University of Georgia **Athens, GA**

Doctor of Philosophy, Mathematics 2020-2025

- Dissertation: *On localizing subcategories of Lie superalgebra representations*
- Advisor: Daniel K. Nakano

Master of Arts, Mathematics 2019-2020

- Thesis: *On parabolic Kazhdan–Lusztig polynomials*
- Advisors: Brian Boe and Arik Wilbert

Bachelor of Science, Mathematics 2016-2019

- Cumulative GPA: 3.69
- Graduated Cum Laude

WORK EXPERIENCE

Johns Hopkins University **Baltimore, MD**

J.J. Sylvester Assistant Professor of Mathematics (Postdoc) 2025-Present

- Conducting mathematical research in the areas of tensor triangular geometry and the representation theory of Lie superalgebras with the intent to publish and give conference presentations on results.
- Instructing advanced undergraduate courses in abstract algebra and mathematical logic.
- Co-organizing the JHU Topology Seminar.

University of Georgia **Athens, GA**

Graduate Teaching Assistant 2020-2025

- Taught five sections of Precalculus, two sections of Calculus I, one section of Calculus II, and an online Calculus I course. Emphasized active learning in small classes (capped at 19 students), designed course materials, wrote and proctored exams, graded assignments, and held office hours.
- Supported instruction in undergraduate linear algebra and both undergraduate and graduate abstract algebra by grading assignments.
- Assisted undergraduates across a wide range of mathematics courses in a drop-in tutoring setting.

PROFESSIONAL DEVELOPMENT

Erdős Institute Spring 2026

Data Science Certificate (in progress)

- Cohort based training in Python for data analysis, statistics, machine learning fundamentals, data visualization, and applied industry projects.
- Capstone project TBD.
- Aimed at supporting transition from academia to applied roles.

PUBLICATIONS

- On localizing subcategories of Lie superalgebra representations, submitted, (2025), 15 pages, arXiv:2503.13639
- The homological spectrum and nilpotence theorems for Lie superalgebra representations (with D. Nakano), to appear in *J. Algebra* (2025), 25 pages, arXiv:2404.04457

SELECTED TALKS AND PRESENTATIONS

- Contributed talk at the 15th Southeastern Lie Theory Workshop, College of Charleston, Charleston, SC. May 2025
- Invited talk in the Topology Seminar in the Department of Mathematics at Johns Hopkins University, Baltimore, MD. April 2025
- Invited talk, Joint Mathematics Meetings, Seattle Convention Center, Seattle, WA. January 2025
- Invited talk, AMS Spring Western Sectional Meeting, San Francisco State University, San Francisco, CA. May 2024
- Contributed talk at the 14th Southeastern Lie Theory Workshop, University of Virginia, Charlottesville, VA. March 2024
- Talk in the Algebra Seminar in the Department of Mathematics at the University of Georgia, Athens, GA. November 2023
- Invited talk, AMS Fall Southeastern Sectional Meeting, University of Alabama, Mobile, AL. October 2023

AWARDS AND HONORS

William Armor Wills Memorial Scholarship Award May 2025
- University of Georgia, Department of Mathematics, Athens, GA.
- Awarded annually for excellence in research.

Charles M. Strahan Award December 2019
- University of Georgia, Department of Mathematics, Athens, GA.
- Awarded annually to the top junior mathematics major.

SKILLS

Programming:
- Python, Java, Latex, HTML, CSS

Languages:
- English (Native)
- Portuguese (Limited working proficiency)