

# SARAH HELMBRECHT

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## Summary

I recently earned my Master of Science in Mathematics from the New York University Courant Institute with a research focus on deep learning from a theoretical/mathematical perspective (May 2025). I hold a Bachelor of Science in Mathematics and Computer Science from Tulane University, which I completed in just three years (May 2023). My academic background has equipped me with a strong foundation in problem-solving, abstraction, and analytical thinking - skills that I am now channeling into machine learning. I'm currently seeking opportunities in machine learning where I can bridge rigorous mathematical theory with real-world systems.

## Education

### ***New York University Courant Institute – Master of Science in Mathematics***

*New York City, NY | September 2023 – May 2025*

- Relevant Courses: Master's Thesis, Algebra I, Big Data, Linear Algebra I-II, Math Analysis I-II, Math Techniques for CS Applications, Number Theory, Ordinary Differential Equations, Scientific Computing

### ***Tulane University – Bachelor of Science in Mathematics and Computer Science***

*New Orleans, LA | August 2020 – May 2023*

- Relevant Courses: Algorithms, Applied Math, Artificial Intelligence, Calculus I-III, Complex Analysis I, Computer Science I-II, Data Science, Discrete Math, Linear Algebra, Machine Learning, Probability, Real Analysis I-II, Statistical Inference

## Work Experience

### ***Teaching Assistant – New York University***

*September 2023 – May 2024*

- Taught 4 sections of Calculus 1 (133 students) and 2 sections of Linear Algebra (65 students)
- Led weekly recitations; held office hours; proctored and graded quizzes and exams

### ***Quantitative Finance Intern – Franklin Templeton – O'Shaughnessy Asset Management***

*May 2023 – August 2023*

- Researched and implemented a probabilistic PCA risk model

## Projects and Research

### ***Master's Thesis – New York University***

*May 2025*

- Survey of theoretical perspectives on generalization in deep learning

### ***Big Data Final Project – New York University***

*May 2025*

- Developed an AWS workflow to process online recipes into a searchable database indexed by allergens

## Skills, Talents, & Achievements

- Technical skills: Python, SQL, C++, C, Java, R, MATLAB, HTML, LaTeX, AWS, Git
- Soft skills: Adaptability, Problem Solving, Communication, Creativity, Self-Motivation