







# Sam Pease

She/Her

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## About me

Innovative research mathematician with a passion for interconnected areas, such as the Langland Program, which demand proficiency in diverse subjects. Eager to apply my skills in mathematics, coupled with a background in computer science and exceptional communication skills, to a dynamic research role within fields like data science or machine learning. Committed to utilizing my unique perspective as a trans woman to contribute to the development of equitable and inclusive systems.

## Education

### Ph.D. in Mathematics

[Rutgers University-Newark](#)


 May 2025 4.0/4.0 GPA

Research Topics: Langlands Program, Number and Representation Theory

Advisor: [Chen Wan, Ph.D](#)

### B.S. in Mathematics & Computer Science with Distinction

[Duke University](#)

 May 2020 3.7/4.0 GPA

Thesis: *Computing Values of Symmetric Square L-Functions using the Pull-back Formula.*

Advisor: [Aaron Pollack, Ph.D](#)



## Skills

- Programming:** Python, Sage, Jupyter Notebook, Java, Git
- Quantitative and Problem-Solving:** Demonstrated strength in quantitative analysis and problem-solving, with a proven ability to conduct research and quickly grasp new concepts.
- Communication:** Adept at simplifying and effectively conveying complex ideas to diverse audiences.
- Time Management and Independence:** Successfully managed time and demonstrated independence while leading a multi-year research project.

## Research Experience

### PhD Researcher



[Rutgers University - Newark](#)

 2020-Present  
 Newark, NJ

- Lead multi-year independent research project
- Cultivate expertise through continuous review of current academic research papers
- Collaborated effectively with peers and mentors to articulate complex concepts, fostering collective understanding and advancing the research agenda

### Program for Research for Undergraduates (PRUV) Fellow

[Duke Mathematics Department](#)

 2019-2020  
 Durham, NC

- Utilized Sage programming to extract and manipulate database data, employing advanced linear algebra techniques to convert theoretical values into tangible results.
- Presented research findings across various levels to diverse audiences, showcasing effective communication skills.

### WindAid Engineering Internship

[International NGO](#)



 Summer 2017  
 Trujillo, Peru

- Conducted research and contributed to design improvements for wind turbines
- Designed and implemented an Arduino circuit to monitor and report data from remote wind turbine locations

## Work Experience

### Calculus Professor



[Rutgers University - Newark Math Department](#)

 Spring 2022, Summer 2021&2023  
 Newark, NJ

- Taught Class, answered questions, and held office hours to reinforce learning
- Developed lesson plans, created tests, and managed homework assignments

### Teaching Assistant



[Rutgers University - Newark Math Department](#)

 Fall 2021, Fall 2022 - Spring 2024  
 Newark, NJ

- Led engaging recitation sections and held productive office hours
- Achieved an above-average pass rate and received excellent reviews from students

### Math Tutor

[Duke Math Help Room & Rutgers Tutoring Center](#)

 Fall 2017 - May 2021  
 Durham, NC & Newark, NJ

- Assisted in teaching College and Linear Algebra and single and multivariable Calculus
- Played a key role in an initiative to solidify prerequisite math material in students' understanding
- Tutored students one-on-one outside of the help room

### Lifeguard

[Duke Aquatics Center](#)


 Fall 2016 - Spring 2020  
 Durham, NC

- Maintained concentrated observation of pool and its users in order to anticipate problems and to identify an emergency quickly
- Executed rescues and initiated emergency actions as needed

## Projects

### Cat Identification with Neural Network from Scratch



[Rutgers University - Newark](#)

 Spring 2023  
 Newark, NJ

- Developed a neural network from scratch in Jupyter Notebook
- Analyzed various network topologies and assessed the impact of activation functions on accuracy

### Differentiating Forest using Topological Data Analysis

[Duke University](#)

 Spring 2017  
 Durham, NC

- Analysed Lidar readings of forest canopies to determine forest characteristics
- Used topological data analysis to differentiate data