LOGAN REED

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RESEARCH INTERESTS

Algebra, Computational Math, Numerical Analysis, Optimization, Representation Theory, Scientific Computing.

EDUCATION

Bachelor of Science in Applied Mathematics at Texas State University 2018-2021
Minor in Computer Science.
3.52 GPA.

Master of Science in Mathematics at Rutgers University-Camden 2021-2023
The Pólya-Szëgo Conjecture on Polygons: A Numerical Approach
3.96 GPA

PUBLICATIONS

Christopher Denaro, Nathaniel J Merrill, Sean T McQuade, Logan Reed, Karim Azer, and Benedetto Piccoli. A pipeline for testing drug mechanism of action and combination therapies: From microarray data to simulations via Linear-In-Flux-Expressions: Testing four-drug combinations for tuberculosis treatment. *Math. Biosci.*, 2023

WORK HISTORY

Private Math Tutor 2018-

· I have tutored over 125 students, with 103 five star reviews.

Math Tutor at Math CATS 2018-2020

· I tutored through the Department of Mathematics at Texas State.
· I gave talks at the beginning of each semester to new students with the goal of student outreach.

Math Tutor at the Math and Stats Lab at Rutgers-Camden 2021-2022

· I tutored through the Department of Mathematics at Rutgers-Camden.

Part Time Lecturer Fall 2021

· I taught an Intro to College Algebra course at Rutgers-Camden. I designed the structure and material of the class independently.

Calculus One TA Spring 2022

· I am a Teacher's Assistant for two sections of Calculus One at Rutgers-Camden. I set up the canvas pages, grade homework and exams, and maintain office hours for the students.

Part Time Lecturer Fall 2022

· I taught an Intro to College Algebra course at Rutgers-Camden. I designed the structure and material of the class independently, except for the standardized final exam.

Calculus Three TA Spring 2023

· I was a Teacher's Assistant for one section of Calculus Three at Rutgers-Camden. I ran the lab, graded homework and exams, and maintained office hours for the students.

Linear Algebra TA Spring 2023

· I was a Teacher's Assistant for one section of Linear Algebra at Rutgers-Camden. I monitored canvas assignments, graded homework and exams, and maintained office hours for the students.

Lecturer Fall 2023

· I taught a Mathematics for Liberal Arts course at Rutgers-Camden. I designed the structure and material of the class independently.

Research Assistant Spring 2022-Winter 2023

· I assisted in the creation of software accompanying research projects.
· I generated graphics and data to be used in the lab's research.

INDEPENDENT STUDY TOPICS

K-Forcing on the Cartesian product of Simple Graphs

· Studying the bounds on the K-Forcing number for graphs which are the Cartesian product of common families of graphs, such as paths, cycles, and trees.

Complexes of DiGraph Homomorphisms

· An independent study project to produce results similar to Babson and Kozlov on DiGraphs

A Study on Minimal Prime Graphs of Simple Groups

· An independent study project with the goal of producing new Group Theoretic results using Graph Theory
· The main focus was an enumeration algorithm for Triangle Free Three Colored Graphs, which correspond to Minimal Prime Graphs.

Analysis

· Working through *Real and Complex Analysis* by Rudin.

Lie Algebra

· An independent studies course on the classical results from the algebraic field of Lie Algebra.
· The goal was to work through the prerequisites and eventually move to Vertex Operator Algebras.

Vertex Operator Algebras

· Studying from *Introduction to Vertex Operator Algebras and Their Representations* by Lepowsky and Li.

Algebraic Topology

· Studying from *Algebraic Topology* by tom Dieck and a book of the same name by Hatcher.

Spectral Theory

· An independent study which resulted in studying unknown properties of the Dirichlet Laplacian.
· Culminated in my Master's Thesis.

EXTRA CURRICULAR ACTIVITIES

· Four time Dean's List recipient.
· Head Martial Arts Instructor from 2016-2018.
· A member of the Math Club at Texas State 2018-2020.
· A member of the Problem Solvers Group at Texas State 2018-2019.
· Mathematical Sciences Scholarship Award 2022.
· Distinguished Thesis Certificate 2023.

PROGRAMMING SKILLS

- Linux, IT, MatLab, Maple, Mathematica, SQL, Git
- 5+ years of Python/C++/C#/JavaScript
- 4+ years of LaTeX