Juliann Geraci

julianngeraci.github.io
jgeraci2@huskers.unl.edu | 845.901.7002

GRADUATE TEACHING ASSISTANT
Mathematics Department, University of Nebraska - Lincoln
Aug 2020 – Present | Lincoln, NE

- Taught and assisted in undergraduate mathematics courses ranging from College Algebra to Linear Algebra.
- Developed lesson plans, graded assignments, and held regular office hours to support students.
- Designed inclusive teaching materials emphasizing problem-solving and collaboration.

GRADUATE RESEARCH ASSISTANT
Center for Science, Mathematics and Computer Education, UNL
June 2021 – August 2024 | Lincoln, NE

- Conducted qualitative research on high school mathematics teachers' integration of computer programming in classrooms, analyzing curriculum design, pedagogy, and teacher feedback.
- Mathematical research in Boolean matrix factorization (BMF), exploring combinatorial and algebraic structures and presenting results in academic settings.
- Collaborated on a cross-disciplinary quantum science education project, contributing to the development of instructional materials connecting linear algebra and quantum computing concepts for high school students.

NSF GRADUATE STUDENT MENTOR
The Polymath Junior Program
June 2023 – August 2023 | Lincoln, NE

- Provided academic support and mentorship to undergraduate students conducting mathematical research under NSF-funded faculty supervision.
- Served as a resource for questions on mathematical content, research process, and communication, helping students deepen understanding and stay on track.

PROJECTS

BOOLEAN MATRIX FACTORIZATION

- Developed a Boolean Matrix Factorization project in Python, Macaulay2, and Julia to analyze large binary datasets.
- Created a custom algorithm to compute factorizations for research data collection.
- Planning to automate the BMF process for scalable and efficient analysis.

MLB STATISTICS VISUALIZATION

- Developed an exploratory data analysis project on MLB statistics, focusing on interactive visualizations to uncover team and player performance trends.
- Utilized Python data science libraries and Plotly to create dynamic, insightful charts that support data-driven sports analytics.

EDUCATION

UNIVERSITY OF NEBRASKA - LINCOLN
Doctor of Philosophy, Mathematics
Expected May 2026

UNIVERSITY OF NEBRASKA - LINCOLN
Master of Science, Mathematics
December 2021

SUNY OSWEGO
Bachelor of Arts, Mathematics
May 2020

SKILLS

PROGRAMMING
Python • MATLAB • Java • C++ • Julia • HTML • CSS • SQL• JavaScript

TECHNOLOGY
NumPy • pandas • scikit-learn •matplotlib • seaborn • SageMath • Macaulay2 • GitHub • VS Code

AWARDS

2024 MOST Fellow
National Museum of Mathematics

2021 Don Miller Outstanding Teaching by a Graduate Student
University of Nebraska - Lincoln

LINKS

Github:// **julianngeraci**
LinkedIn:// **juliannGeraci**