Shreeya Behera

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Current Position

Assistant Professor of Instruction September 2025 - Present
Department of Statistics and Data Science, Northwestern University IL, USA

Education

The Ohio State University 2018 - 2024
PhD in Mathematics
PhD thesis: Variants of the chromatic number of the plane
Advisor: Prof. Matthew Kahle
GPA - 3.85/4.0

Indian Institute of Science Education and Research, Pune 2013 - 2018
BS-MS Dual degree
Master's thesis: Equidistribution theorems in the theory of modular forms.
Advisor: Prof. Kaneenika Sinha
CGPA: 9.3/10

Skills

- **Languages & Platforms:** : Python, MATLAB, Sagemath, LaTeX, Jupyter Notebook.
- **Python Libraries**: NumPy, pandas, Matplotlib, Scikit-learn, TensorFlow, SQLite3, TensorFlow
- **Quantitative:** Statistics, Probability, Bayesian Analysis, Time Series Analysis, Optimization, ODE, Mathematical Modelling, Biostatistics
- **CS Courses:** Data Science, Data Mining, Machine Learning, Neural Nets, Topological Data Analysis
- **Soft Skills:** teaching, problem-solving, critical thinking, scientific writing, communication, adaptability, time management, leadership

Industry Experience

Data Scientist, Pandora Bio, Inc Aug 2024 - Aug 2025

- Developing machine learning models with the aim of providing early detection and personalized resources to help young adults manage their mental and behavioral health.
- Collaborating with cross-functional teams to integrate mental health solutions into Pandora's platform, enhancing user engagement and support mechanisms.
- Utilizing Python, R, and big data technologies to process and analyze large datasets, ensuring the accuracy and reliability of results.

Teaching Experience

Lecturer, The Ohio State University Aug 2024 - May 2025

- Leading recitations for Calculus III, emphasizing problem-solving techniques and real-world applications
- Designing and delivering engaging lectures to enhance student understanding and participation; grading assessments, providing detailed feedback to students to support their academic growth.

Graduate Teaching Associate, The Ohio State University

- **Courses Taught:** Aug 2019 - May 2024

1. **2173: Calculus 3** (Engineering Mathematics B: Multiple integrals, line integrals, vector fields, second order ordinary differential equations), taught in Fall 2023.
2. **2153: Calculus 3** (Multi-variable differential and integral calculus), taught in both Fall 2021 and 2022.
3. **1172: Engineering Mathematics A** (Integration techniques, Taylor series, differential calculus of several variables, and applications), taught in Spring 2020.
4. **1152: Calculus 2** (Integral calculus, sequences and series, parametric curves, and polar coordinates), taught in Fall 2020.
5. **1151: Calculus 1** (Differential and integral calculus of one real variable), taught in Fall 2019.
6. **1149: Trigonometry** (Trigonometric functions and their properties, vectors, polar coordinates, and complex numbers), taught in Spring 2022, and 2024.
7. **1131: Calculus for Business** (Survey of the calculus of one and several variables, with business applications), taught in Spring 2021.
8. Mentored an undergraduate student during a semester-long reading project on Algorithms in Fall 2021.

- Received the Phil Huneke Distinguished Graduate Teaching Associate Award for exceptional teaching contributions.
- Facilitated preparation of undergraduate students for presentations aimed at a non-technical audience, enhancing their understanding and engagement with complex mathematical concepts.

PROJECTS

- **Doctoral Research** (The Ohio State University)
  - Built algorithms and utilized Python and SAT solver on a high-performance computing cluster to construct innovative graphs, facilitating the discovery of optimal solutions for unresolved graph coloring problems.
  - Skilled in working with collaborators with an ability to write, and edit internal technical reports resulting in presentations.
- **Broadway Sales Prediction** (Erdös Institute Group Project)
  - Collaborated and consulted with peers to perform a time series analysis such as Auto-Regression, SARIMA, and Prophet to predict weekly gross for Broadway ticket sales.
  - Achieved accuracy scores of over 95% in predicting KPIs such as weekly gross and variability which can inform optimized operations and increased profitability.
  - Presented our findings and insights to a panel of judges and submitted an executive summary.
- **Heart Disease Multi-Class Classification**
  - Analysed demographic, behavioral, and medical history data to identify key indicators as well as to predict the overall heart disease by implementing algorithms such as kNN, logistic regression, and random forest.
  - Performed a P-value test to identify significant risk factors and predicted the presence of heart disease with an 88% accuracy.
- **Chandra- Pneumonia classification** (Erdös Institute Group Project)
  - Trained a Convolutional Neural Network model for image recognition and classified chest X-ray scans based on whether they exhibit signs of Pneumonia or not.
  - Built a customized evaluation score, to optimize high precision and recall, resulting in an F1 score of 96%.

- **Modelling of feedback mechanism of acute leukemic cell** (DAAD scholar- University of Heidelberg)
  - Designed and developed a differential equations model for the feedback mechanism of acute leukemic cells using MATLAB.

PUBLICATIONS

- Shreeya Behera, Matthew Kahle. “Coloring multi-distance graphs in the plane: the probabilistic approach." (in prep.)
- Shreeya Behera. “Variants of the chromatic number of the plane." PhD thesis, Ohio State University, 2024.
- Shreeya Behera. “Equidistribution Theorems in the Theory of Modular Forms." MS thesis, Indian Institute of Science Education and Research Pune, 2018.

AFFILIATIONS AND HONORS

- OSU Summer Research Fellowship for the Summers of 2019, 2021, 2022, 2023, 2024.
- Received **Special Graduate Assignment (SGA) fellowship** award for the Spring Semester of 2023.
- **Winner of the Phil Huneke Distinguished GTA Award** (Departmental Teaching Awards), 2021.
- **Finalist of the Phil Huneke Distinguished GTA Award** (Departmental Teaching Awards), 2020.
- **Tibor Radó Graduate Fellowship**, Department of Mathematics, July 2018- July 2019
- **DAAD Research Fellowship** for the year 2016.
- Summer Research Fellow, **Indian Academy of Sciences (IAS)**, 2015.
- Selected for VIJYOSHI Camp Organized by KVPY (Kishore Vaigyanik Protsahan Yojana) for the year 2013.
- **INSPIRE Fellowship** from the MHRD, India, 2013.

TALKS

- Coloring multi-distance graphs in the plane: the probabilistic approach., *Research Group Meeting* (April 2024).
- h-Vectors and Dehn-Sommerville Equations, *Research Group Meeting* (March 2024).
- Faces of Polytopes from the book "Lectures on polytopes”, *Research Group Meeting* (November 2023).
- An exponential improvement for diagonal Ramsey, *Research Group Meeting* (September 2023).
- Research update, *Research Group Meeting* (April 2023).
- Chromatic number of Two-Distance Graph in the Euclidean plane, *Research Group Meeting* (November 2022).
- Moving robots efficiently using the combinatorics of $CAT(0)$ cubical complexes, *OSU TAGGS student seminar* (April 2022).
- The topology of the directed clique complex as a network invariant, *OSU TDA and Neuroscience Course* (March 2022).
- Distinct distance estimates and low degree polynomial partitioning. , *Research Group Meeting* (November 2021).
- Erdős Unit Distance Problem, *OSU Candidacy Presentation* (June 2021).

- Uniform Infinite Planar Triangulations, *Research Group Meeting* (February 2021).
- Weighted equidistribution theorems in the theory of modular forms, *OSU Number Theory student seminar* (November 2018).

LEADERSHIP EXPERIENCE

- Organizer of weekly Group meetings. 2020-2024
- Delegate to represent the Mathematics program on the Council of Graduate Students (CGS). 2022-2023
- Organizer of student seminar TAGGS. 2022-2023
- CGS International Student Affairs Committee member. 2022-2023
- Student representative on the Graduate Studies Committee, Mathematics department, OSU. 2021-2022
- Treasurer, Association for Women in Mathematics (AWM), The Ohio State University Chapter. 2021-2023
- Member of Diversity and Departmental Climate committee. 2021-2022
- Member of the organizing committee, DIRECTED READING PROGRAM (DRP), OSU. 2021-2023
- Volunteered for High school, Beyond the Classroom Camp. Summer2020
- Member of MIMAMSA (All India Science Quiz organized by IISER Pune) question preparatory group. 2013-2015
- Organizer, Maths Club Events, IISER Pune. 2013-2016
- Treasurer, KARAVAAN, Annual Tech Cultural Fest, IISER Pune. 2014-2016
- Volunteer for DISHA (IISER Pune group for teaching underprivileged children). 2013-2015

REFERENCES

Available Upon Request