

Himanshu Yadav || yhimanshu484@gmail.com ||

EDUCATION

- **Ph.D. in Mathematics, University of Florida** Gainesville, USA
• *GPA: 4/4 Research Interests: Applied Mathematics and Topological Data Analysis (TDA)* Aug 2021 – May 2026
- **M.Sc. in Mathematics, Indian Institute of Technology Delhi** New Delhi, India
• *GPA: 10/10 Distinction: Dean's List, Received Gold Medal* July 2018 – Aug 2020
- **B.Sc. (Honours) in Mathematics, Hindu College, University of Delhi** New Delhi, India
• *GPA: 9.514/10 Distinction: Dean's List* July 2015 – May 2018

SKILLS

- **Languages and Manager:** Python, Julia, Kotlin, R, SQL, Slurm (for Perlmutter supercomputer)
- **Libraries and Tools:** Numpy, Pandas, Scikit-learn, TensorFlow, PyTorch, Keras, Dash, Tableau
- **Methods and Techniques:** Deep Learning, Machine Learning, Large Language Models, Mathematical Modeling, Time Series Analysis, Data Visualization, Optimization, Android App Development

EXPERIENCE

- **Summer Intern at the Lawrence Berkeley National Laboratory** Berkeley, California, USA
Applied Mathematics and Computational Research Division Summer 2024
 - Used the *Perlmutter* supercomputer and leveraged large language models to categorize unstructured clinical notes.
 - Identified different comorbidities and presented survival analysis at the *Computing Sciences Summer Session*.
- **Participant in the AMS's Mathematics Research Communities** Buffalo, New York, USA
Climate and TDA conference week, American Mathematical Society (AMS) Summer 2024
 - Worked on a project titled *Topological Interactions between Cyclone and Anticyclone in the North Atlantic Region*.
 - Identified topological invariants in atmospheric data, linking them to critical weather phenomena and dynamics.
- **Participant in the Summer Data Science Boot Camp** Columbus, Ohio, USA
The Erdős Institute Summer 2023
 - Mastered end-to-end data science and ML workflows; data analysis, data cleaning and manipulation using Python.
 - Acquired skills in supervised (regression, classification) and unsupervised (dimension reduction) ML techniques and applied them to a project on *Market Trends vs. News Media Sentiment*, involving sentiment analysis.
- **Research Assistant (funded by a National Institutes of Health Grant)** Gainesville, Florida, USA
Bureau of Economic and Business Research, University of Florida Summer 2022
 - Developed a mathematical model for the Associate Dean at the University of Florida to optimize decisions on hiring and grant funding using NLP, topic modeling, and TDA.
 - Presented research findings on researchers' networks at the *International Network for Social Network Analysis 2023*.

PROJECTS

- **Patient Clustering and Survival Analysis:** Identified patient clusters with different mortality rates within the Women's Ischemia Syndrome Evaluation study and presented research at the *American College of Cardiology 2024*.
- **Sleep State Detection:** Leveraged time series analysis and machine learning in the Child Mind Institute project to significantly enhance the precision of sleep state detection from wrist-worn accelerometer data.
- **Android App Development:** Developed and customized an Expense Manager app for our team. The app facilitated real-time expense tracking and optimized allocation strategies for organizational operations.

LEADERSHIP AND POSITIONS OF RESPONSIBILITY

- **Team Management:** Managed a team of 50 individuals in implementing an innovative pedagogical approach, recognized by iCONGO and the United Nations for contributions to primary education for underprivileged children.

CONFERENCES (TALK)

- **AMS 2024 Fall Southeastern Sectional Meeting** Savannah, GA, USA
Georgia Southern University (cancelled) October 5-6, 2024
- **South Central Topology Conference II** San Marcos, Texas, USA
Texas State University February 11-12, 2023

CONFERENCES (POSTER PRESENTATION)

- **Computing Sciences Summer Session 2024** Berkeley, CA, USA
Lawrence Berkeley National Laboratory August 6 - 7, 2024
- **Topological Data Analysis Week 2024** Kyoto, Japan
Kyoto University July 31- August 4, 2023

CONFERENCES ATTENDED

- **Topological Data Analysis Conference (UFTDA2024)** Gainesville, FL, USA
University of Florida February 8-9, 2024
- **Randomness in Topology and its Applications** Chicago, IL, USA
The Institute for Mathematical and Statistical Innovation March 20-24, 2023
- **Topological Data Analysis Conference (UFTDA2023)** Gainesville, FL, USA
University of Florida February 23-24, 2023
- **Measure-theoretic Approaches & Optimal Transportation in Statistics** Paris, France
Institute Henri Poincare November 21-25, 2022
- **CBMS Conference on Topological Data Analysis and Persistence Theory** Valdosta, GA, USA
Valdosta State University August 8-12, 2022
- **FSU-UF Joint Topology and Geometry Meeting** Gainesville, FL, USA
University of Florida February 11-12, 2022
- **University of Florida Topological Data Analysis Conference (UFTDA2022)** Gainesville, FL, USA
University of Florida January 20-21, 2022