

Mrugank Dake

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EDUCATION

New York University

PhD in Experimental Psychology (Cognition & Perception)

GPA: 3.93/4.0

Relevant Coursework: Math Tools for Cognitive and Neural Science, Psychophysics, Data Science,

New York, NY

Expected Graduation: 2026

Indian Institute of Science Education & Research (IISER) Tirupati

BS-MS Dual Degree (Biology w/ minor in Physics)

CGPA: 8.2/10

Relevant Coursework: Nonlinear Dynamics & Chaos, Linear Algebra (I & II), Group Theory, Number Theory, Calculus (Univariate and Multivariate), Data Science, Big Data, Waves & Mechanics, Quantum Physics I

Tirupati, AP, India

Graduated August 2021

RESEARCH EXPERIENCE

Clayspace Lab, New York University

September 2021 - Present

Supervisor: Dr. Clayton Curtis

- Led multiple research projects spanning ideation, experimental design, data collection, and analysis across diverse data types, including human behavior, eye-tracking, and neural data (EEG, MEG, ECoG, fMRI)
- Developed simulations for electric fields (SimNIBS) and applied transcranial magnetic stimulation (TMS) to investigate the role of distributed neural representations in working memory.
- Authored one manuscript currently under review at Nature Communications and two others in preparation, with two additional projects ongoing.
- Presented findings at conferences, delivered talks, and contributed to academic discussions in lab and departmental meetings.

Sciurid Lab, IISER Tirupati

May 2020 - August 2021

Supervisor: Dr. Nandini Rajamani

- Led a national citizen science project to collect and analyze acoustic data on squirrel vocalizations.
- Preprocessed, annotated, and conducted statistical analyses to test hypotheses.
- Developed and evaluated template matching, classification models, and CNNs to process large-scale passive acoustic recordings from rainforests.
- Presented results in a departmental talk and summarized findings in a thesis, with two manuscripts in preparation.

WORK EXPERIENCE

Teaching Assistant

- EEG/MEG/iEEG Methods (Graduate Course, New York University) September - December 2024
- Introduction to Cognitive Neuroscience (Undergraduate Course, New York University) September - December 2023
- Math Tools 3: Linear Systems & Fourier Transforms (Graduate Course, New York University) January - May 2023

Online Tutoring

- Statistics & Biology Tutor (Chegg India inc.) January 2019 - August 2021
- Biology Tutor (Sanfoundry India) May 2019 - March 2020

VOLUNTEER WORK

Website Coordinator for ClimateMatch Academy

February 2023 - July 2023

- Assisted in developing website for first ClimateMatch academy course, with some custom-design scripts

NYU Cognition & Perception Open House Student Organizer

September 2022 - June 2023

- Elected by student body to organize and host two open house events for incoming PhD cohort for Fall 2023

Coordinator for BioWissen (Biology Club, IISER Tirupati)

September 2016 - August 2020

- Organize and host a weekly biology club discussing research articles, projects under progress within the institute and host guest speakers

Coordinator for Shemushi (Quiz Club, IISER Tirupati)

September 2016 - May 2017

- Organize and host a weekly quiz club discussing recent global news events as well as hosting themed quiz events for special occasions

Rural Education Volunteer (Disha Club, IISER Pune)

April 2016 - August 2016

- Host weekly education and game events to promote education within underprivileged rural communities in Pashan, Pune, primarily promoting awareness for education for girls

OTHER SKILLS

- **Language Skills:** English (fluent), Marathi (native), Hindi (native), German (basic)
- **Programming Skills:** Advanced: Python, MATLAB, R; Intermediate: LaTeX, HTML; Basic: CSS, JavaScript
- **Software Skills:** Tensorflow, Keras, scikit-learn, PyTorch, MNE-Python, Git, Github, fMRIPrep, SimNIBS, Psychtoolbox, Adobe Illustrator, Adobe Photoshop
- **Neuroimaging & Modeling Skills:** EEG, MEG, ECoG, fMRI, TMS, signal processing and analysis, neural networks, computational modeling, basic and advanced statistics