Mrugank Dake

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<https://mindemory.github.io/>

EDUCATION

**New York University**  New York, NY

*PhD in Experimental Psychology* (Cognition & Perception) Expected Graduation: 2026

*GPA:* 3.93/4.0

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

**Indian Institute of Science Education & Research (IISER) Tirupati** Tirupati, AP, India

*BS-MS Dual Degree* (Biology w/ minor in Physics) Graduated August 2021

*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

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