

# MRITTIKA DEY

🌐 mrittika-dey ✉ mrittikadey5683@gmail.com in mrittika-dey

## EDUCATION

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### National Brain Research Center, India

Master of Science (M.Sc.) in Neuroscience

First year aggregate: 82.6%

Oct 2020 - Present

### Lady Brabourne College, India

Bachelor of Science (B.Sc.) in Microbiology

Final aggregate : 76.25%

July 2017 - Oct 2020

## RESEARCH EXPERIENCE

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### Cognitive Brain Dynamics Lab

National Brain Research Center, India

**Designation:** M.Sc. dissertation student

**Project Supervisor :** Dr Dipanjan Roy

**Project :** Characterising age related dynamical changes in coherence, phase, and power between transient resting state networks in the brain.

August 2021 - Present

## PROJECTS

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### Cognitive Brain Dynamics Lab

National Brain Research Center, India

**Project Supervisor :** Dr Dipanjan Roy

- Analysing MEG data from a large cross sectional dataset to identify age-related shifts in phase dynamics of transient resting state brain networks in healthy aging. Statistical Bayesian modeling is used to characterise transient brain states which show varied network dynamics with both frequency and age. We also want to explore whether these states follow a specific gradient of shift in spectral properties with age and whether this phenomenon can be captured in a millisecond timescale (100-200ms).

August 2021 - Present

### Computational Neuroscience project

National Brain Research Center, India

**Project Supervisor :** Dr Arpan Banerjee

- Replicated the results of the paper 'Biophysical Basis for Three Distinct Dynamical Mechanisms of Action Potential Initiation', Prescott et al., 2008 for Computational Neuroscience coursework project.

March 2021

**Links:** Report, Slides, GitHub repository

## SKILLS

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### Programming:

MATLAB, Python, LaTeX

### Computational Neuroscience:

EEG recording and analysis, MEG analysis, Stimulus design

### Software & Tools:

EEGLAB, Fieldtrip, SPM, NBS Presentation, Freesurfer, HCP workbench

### Experimental:

Cloning techniques, Microbiology and Virology techniques, Cell Culture, Immunohistochemistry, Biochemical assays

## COURSES

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### Neuroscience:

Cognitive Neuroscience, Computational Neuroscience, Systems Neuroscience, Cell and Molecular Neuroscience, Developmental Neurobiology, Neuroanatomy, Membrane Biophysics, Neurochemistry, Neuroimaging

### MOOCs :

NPTEL course on Machine Intelligence and Brain Research (conducted by the Indian Institute of Technology, Madras), MATLAB ONRAMP courses on Machine Learning, Signal Processing, Image Processing and Deep Learning

## ACADEMIC ACHIEVEMENTS

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- Ranked 2<sup>nd</sup> in class during coursework at National Brain Research Center.