

NEELABJA ROY

— *PhD Student in Psychiatry & Data Scientist, NIMHANS; MS Cognitive Science, IIT Kanpur* —

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EDUCATION

PhD in Psychiatry, National Institute of Mental Health and Neurosciences NIMHANS, India; <i>Advisors: Dr. Urvakhsh Mehta & Dr. Jagadisha Thirthalli</i>	<i>2023-24 onwards</i>
Master of Science (MS- by Research) Cognitive Science Indian Institute of Technology Kanpur; <i>Advisors: Dr. Ark Verma & Dr. Harish Karnick</i>	<i>August 2018 - October 2021</i> <i>GPA: 9.44/10</i>
Bachelor of Technology, Computer Science and Engineering Heritage Institute of Technology, Kolkata (affiliated to MAKAUT)	<i>August 2014 - June 2018</i> <i>GPA: 7.78/10</i>

PROFESSIONAL RESEARCH ENGAGEMENTS

Data Scientist, National Institute of Mental Health & Neuro Sciences (NIMHANS) India (Nov'22 onwards) + with Dr Urvakhsh Mehta, working on prediction and prevention of relapse in early psychosis of Harvard's SHARP + with Dr Naveen KC, on psychological distress analyses fro TeleMANAS, the tele mental health program of India	
Project Research Associate, Language and Cognition Lab, IIT Kanpur Led multiple projects studying consequences of socio-perceptual salience on cognitive responses of memory, attention	(Jan-Sep'22)
Analyst, IndianPAC Consultancy, Strategic Research Insight Lead, West Bengal	(Dec'22-April'23)
Teaching Experience, Research and Teaching Assistant, Indian Institute of Technology K	(Jan'19-May'20)
Research Intern, NITI Aayog, Government of India Analysing large-scale demographic datasets towards informing effective policy preferences for implementation	(Jan-Feb'17)
Summer Research Fellow of the Indian Academy of Sciences at CNCS, Univ of Hyderabad Applied computational model, physiological responses for basis of action learning from imitation and mirror-neurons	(Jun-Aug'16)

PUBLICATIONS & PRESENTATIONS

+ Journal Publications

- Uppinkudru, C., **Roy N**, Bharath, R. D. et al. (2025), Sustained attenuation of sensorimotor network functional connectivity with acute and maintenance phase risperidone treatment in first-episode schizophrenia. *Schizophrenia research*, 281, 122–124. doi: 10.1016/j.schres.2025.04.037
- **Roy N.**, Itthal, D., Mehta, U. M. et al. (2025), Putative Mechanisms of Electroconvulsive Therapy in Treatment-Resistant Schizophrenia Examined Using Magnetic Resonance Imaging. *Biological psychiatry global open science*, 5(4), 100494. doi: 10.1016/j.bpsgos.2025.100494
- Mehta U., **Roy N** et al. (2024), Incremental Predictive Value of Genetic Risk and Functional Brain Connectivity in Determining Antipsychotic Response in Schizophrenia, *Psychiatry Research*, doi:10.1016/j.psychres.2024.116201.
- Mehta U., Itthal D., **Roy N**, et al. (2024), Posterior cerebellar resting-state functional connectivity: A stable neural marker across the developmental course of schizophrenia. *Biological Psychiatry S0006-3223(24)00076-3*.doi: 10.1016/j.biopsych.2024.01.027 *role: Formal analyses, data curation, data validation, data visualisation, review*
- **Roy N**, Karnick H and Verma A (2023) Towards the self and away from the others: evidence for self-prioritization observed in an approach avoidance task. *Front.Psychol*.14:1041157.doi:10.3389/fpsyg.2023.1041157
- (Acknowledged for Contribution) Verma A, Jain A, Srinivasan N (2021). Yes! I love my mother as much as myself: Self- and mother-association effects in an Indian sample. *Quarterly Journal of Experimental Psychology* 74(12)[link]

+ Conference Publications

- **Roy N**, Ahmad I, & Verma A (2023). I Remember Me the Best, always? Evidence for Self-Prioritization in Working Memory Binding using a visuo-spatial working memory task, in *Proceedings of COGSCI 2023* [Peer Reviewed] [link] *role: conceptualisation, methodology, investigation, formal analysis, curation, visualisation, writing original draft*

- Thahir A, **Roy N**, & Verma A.(2023), Handedness Modulates Spatial Attention – Insights from Individual Variations in Lateralization of Cognitive Functions. in *the Proceedings of the 45th COGSCI, 2023* [Peer Reviewed] [link] role: conceptualisation, methodology, investigation, formal analysis, curation, visualisation, writing original draft
- **Roy N.**, Karnick H. & Verma A. (2020). Evidence of Self Referential Prioritization on the basis of Visual Features: Attributing Salience to Rule - Learning. in the *Proceedings of the 42nd COGSCI 2020* (p.1423). [abstract link] role:conceptualisation, methodology, investigation, formal analysis, curation, visualisation, writing original draft

+ Talks and Posters

- **Roy N**, Mehta U, Allen P & PsySHARED consortium (2024)- Using MRI to Understand Ethnocultural Variance in Psychosis, at the *Annual Congress of Schizophrenia International Research Society SIRS 2025, Chicago*
- **Roy N**, Basavaraju R, & Mehta U(2024) - Structure-function Correlates of the Cerebello-Thalamo-Frontal Network in Schizophrenia, at the *63rd Annual Meeting of American College of Neuropsychopharmacology (ACNP), Phoenix*
- **Roy N**, Basavaraju R, & Mehta U(2024). Cerebellar Morphometry in Schizophrenia: An Investigation Across Treatment Stages, at the *World Congress of Biological Psychiatry WFSBP 2024, Istanbul* (Talk) and the *Annual Congress of the Schizophrenia International Research Society SIRS 2024, Florence* (Poster)
- Uppinkudru C, **Roy N**, Shekhar S, et al. (2024). Examining resting-state connectivity and Role of Antipsychotics in Schizophrenia: Analysis of Drug-naïve Patients at Baseline and Six Weeks, and Two-years after Treatment with Risperidone, in *Annual Congress of Schizophrenia International Research Society SIRS 2024, Florence* (Poster)
- Thahir A, **Roy N**, & Verma A.(2023), Handedness Modulates Spatial Attention – Insights from Individual Variations in Lateralization of Cognitive Functions in the *45th COGSCI of the of the Cognitive Science Society, 2023* (Poster)
- **Roy N**, Ahmad I, & Verma A (2023). I Remember Me the Best, always? Evidence for Self-Prioritization in Working Memory Binding using a visuo-spatial working memory task. in the *45th COGSCI 2023, Sydney* (Poster)
- **Roy N**, Jain A, & Verma A., (2022) Switching Association to Mother can disrupt Gains and Loss patterns from Self-preference in the 9th Annual Conference of Association of Cognitive Science in India, *ACCS 2022, Delhi* (Talk)
- **Roy N**, Karnick H, & Verma A., (2022) Approaching the Self Avoiding Others: Evidence for Self-Prioritization using the Manikin-Based Approach Avoidance Task in an Online Study in the 9th *ACCS 2022, Delhi* (Talk)
- **Roy N.**, Karnick H. & Verma A. (2020). Evidence of Self Referential Prioritization on the basis of Visual Features: Attributing Salience to Rule - Learning. at the *32nd ICP '20, Prague* and *42nd COGSCI 2020* (Talks of poster).
- **Roy N** & Karnick H (2019), Does Cooperation help: A Study Based on Agent-Based Modelling, in *the 6th Annual Conference of the Association for Cognitive Science in India, ACCS 2019, Goa* (Poster)

AWARDS, FUNDING GRANTS SELECTIONS

- + **NIH funded Neurostats Bootcamp**, for Advanced Statistical Workshop in Neuroimaging & Genetics (2025)
- + **ACNP Global Scholarship Award**, from the American College of Neuropsychopharmacology (2024)
- + **Young Investigator Award**, World Federation of Societies of Biological Psychiatry (WFSBP) Congress (2024)
- + **International Travel Support** from Dept of Science and Technology, Govt of India for COGSCI, Sydney (2023)
- + **Diversity and Equity award** to the presented research by Cognitive Science Society at 45th COGSCI 2023 (2023)
- + **Summer Research Fellowship Award** research funding grant of the Indian Academy of Sciences (2016)
- + **Best Research Poster** of the Annual Summer Symposium at the Tata Institute of Fundamental Research (2016)

RESEARCH WORKS DETAILED [link]

What marks treatment response in schizoids, neurally & socio-behaviorally? PI: Dr U Mehta, NIMHANS
Studying, using comparative metrics from fMRI-scans, psychophysical responses, digital markers between healthy vs schizoid samples, the critical underpinnings of the latter's treatment response, relapse, and sociobehavioral variations

Self-Reference enhances Visuospatial Working Memory; Handedness modulates spatial attention – IITK
Using separate psychophysical experiments, I studied how a stimuli's social salience accentuates visuospatial working memory performance; and how the individual variation in handedness influences spatial attention for a stimuli

How chimps find friends on challenge from a powerful chimp? PI: Dr Christopher Krupenye, Johns Hopkins
Cognitive decision modelling with regression analysis to understand basis of coalition-solicitation by primate groups

Can a sensory substitution device aid auditorily deficient? PI: Dr Pragathi Balasubramani IITK (Apr-Dec'22)
Translational neuroscience project to design a cognitive intervention to translate sounds to tactile feedback patterns

Me & Them: Investigations into the Perceptual Generalisation of Self-Referential Prioritisation.

MS(R) Thesis - Dr.Ark Verma & Dr.Harish Karnick, Cognitive Sciences, IIT Kanpur - Aug 2019 to Aug 2021

3 separate experimental studies including perceptual-match task & Approach-Avoidance task explored if self-prioritisation is generalisable from previously accorded to neutral singular association to entire collectives of familiar/unfamiliar stimuli through the common simple-features, to then also induce approach-facilitative vs aversive attitudes

Does Cooperation help? A Study in Agent Based Modeling (Project guide: Dr.Harish Karnick)

Based on a python(mesa)-made agent-based model, we developed a primitive, resource-constrained societal system of explorers and exploiters, & tested if and how cooperation (through communication) would yield more fitter societies

Longitudinal Responses of Sense of Agency Scale in COVID-19 -India (May to Nov '20)

Tracked response changes in Sense of Agency Scale (Tapal et al,2017) between two months in COVID lockdown

Internet's Effect on Attention and Reading (Jan-Apr'19) (Course Project: Methods & Tools in Cog Sci, IITK)

A preliminary eye-tracking study exploring the differences between internet-naive sample and internet-savvy people

Using the Model of Motor Planning in Self to Recognise Motor Action in Others PI: Dr Joby Joseph, India

Applied a computational model of the mirror-neurons based system that learns to recognise and imitate motor actions

Paleokymophony - A Novel Approach to Audio-Encryption Technique (BTech Project-Guide: R Roychowdhury)

A unique audio-encryption & compression approach with transference of sound to visual medium, ie. spectrophony.

WORKSHOPS ATTENDED

Advanced Statistical Workshop in Neuroimaging and Genetics, Neurostats Bootcamp of NIH	April 2025
Grant Writing and Management Workshop by the Indian Psychiatric Society, at NIMHANS India	Aug 2023
Diffusion Weighted Imaging Workshop (National Neuroimaging Facility, CBCS Allahabad)	Jun 2022
Winter School on Cognitive Modelling, Indian Institute of Technology Mandi	Feb 2019
Winter School on NLP and Big Data for Psycholinguistics, GIAN, IIT Kanpur	Dec 2018
5th Computer Science Undergraduate Summer School, Indian Institute of Science Bangalore	Jun 2017

SKILLS

Programming:	Python, R, C, C++, Java, MATLAB, Latex, Nengo, PyIBL, ACT-R, HTML-CSS, JS
Software:	FSL, Psychopy, OpenSesame, Pavlovia, Psytoolkit, Netlogo, SPSS, JASP, Arduino
Techniques:	Psychophysical, EyeTracking, GSR, EEG, fMRI (DWI, DTI), Computational Modelling
Soft skills:	Project Management, Leadership, Collaboration
Languages:	Proficient in English, Bengali, Hindi, French (A1 Certified)
TOEFL Score:	110 (Reading- 30, Listening- 29, Speaking- 25, Writing- 26) Test date: 02/02/2022

MAJOR TOPICS STUDIED

PhD:	Advanced Neurobiology, Ethics, Behavioral Psychiatry
Masters:	Foundations of Cognitive Science, Neurobiology, Human Cognitive Processes, Signal Processing, Methods & Tools- Cognitive Science, Computational Cognitive Science, Audit: Social Psychology, Evolutionary Game Dynamics, Philosophy of Mind
Bachelors:	Computational Biology, AI, ML, Data Structure & Algorithm, Linear Algebra, Formal Language and Automata, Graph Theory, Electronics, Microcontrollers, Microprocessors, DBMS, Data Mining, Web Intelligence & Big Data, Social Network Analysis, Sys Admin

POSITIONS OF RESPONSIBILITY

Senate Masters Nominee, Academic Ethics Cell, Indian Institute of Technology Kanpur 2019-20.

Convener, Post Graduate Students' Affairs Council, Students' Gymkhana, IIT Kanpur 2019-20.

Director of Community Services 2016, Rotaract Club of HITK (June to Sep, 2016).

EXTRA-CURRICULAR AWARDS

Awarded the prestigious Teach for India Fellowship of 2018-20 (declined due to academic commitments).

Winner of Outstanding Rotaractor Award Excellent Teacher Award for Rotaract Heritage (2015-16)

Second Runners up in the Presidency National Parliamentary Debate Tournament

REFERENCES

Dr Urvakhsh Mehta

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and Neuro Sciences (NIMHANS), India
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