

NEELABJA ROY

— *Data Scientist, NIMHANS-India, MS (R) grad in Cognitive Science from IIT Kanpur* —

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www.researchgate.net/profile/Neelabja-Roy ◊ web: neelabja.github.io ◊ email: neelabja.iitk@gmail.com

about: aspires to research and explain the emergence & functioning of social cognition factors

EDUCATION

Master of Science (by Research) - MS (by Research) Cognitive Science	<i>August 2018 - October 2021</i>
Indian Institute of Technology Kanpur; <i>Advisors: Dr Ark Verma & Dr Harish Karnick</i>	<i>GPA: 9.44/10</i>
Bachelor of Technology, Computer Science and Engineering	<i>August 2014 - June 2018</i>
Heritage Institute of Technology, Kolkata	<i>GPA: 7.78/10</i>
(Autonomous, affiliated to MAKAUT, formerly West Bengal University of Technology, India)	

PROFESSIONAL RESEARCH ASSOCIATIONS

Data Scientist, National Institute of Mental Health & Neuro Sciences (NIMHANS) India	(Nov'22-now)
with Dr Urvakhsh Mehta, comparative neuroimaging in schizoid for ToM tasks; behavioral data analysis for SHARP	
Online academic collaboration with Dr Christopher Krupenye, Johns Hopkins University	(June'22-now)
Comparative cognition project studying the factors behind partner-solicitation patterns in chimpanzees during conflicts	
Project Research Associate, Language and Cognition Lab, IIT Kanpur	(Jan-Sep'22)
Led multiple projects studying consequences of socio-perceptual salience on cognitive responses of memory, attention	
Analyst (West Bengal State Team Lead, Strategic Research Insights), IndianPAC	(Feb-Dec'21)
Researching informative policy preferences for different demographics for creative ideation of the client's manifesto	
Summer Research Fellow of the Indian Academy of Sciences at CNCS, Univ of Hyderabad	(Jun-Aug'16)
Applied computational model, physiological responses for basis of action learning from imitation and mirror-neurons	

PUBLICATIONS

+ Journals.

- **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 [link]
- **Roy N**, Karnick H. & Verma A. Evidence for the Generalisation of the Self-Prioritization Effect (Submitted)
- Mehta U., Itthal D., **Roy N**, et al., Posterior cerebellar resting-state functional connectivity: A stable neural marker across the developmental course of schizophrenia (Submitted- under Review)
- (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)

+ Conference Proceedings

- **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 the 45th COGSCI 2023* [link]
- Thahir A, **Roy N**, & Verma A.(2023), Handedness Modulates Spatial Attention – Insights from Individual Variations in Lateralization of Cognitive Functions. in *Proceedings of the 45th COGSCI, 2023* [link]
- **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 [link]
- **Roy N.**, Karnick H. & Verma A. (2020). Evidence of Self Referential Prioritization on the basis of Visual Features: Attributing Salience to Rule - Learning. In *Proceedings of the 42nd COGSCI 2023* (p.1423). [Abstract link]
- **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. (pg151 link)
- Shah V, **Roy N**, Balasubramani P, Learning to hear sounds through skin. (Accepted for GATEC 2022)

CONFERENCES (WORK PRESENTED IN) [\[links\]](#)

ESCOPE 2023 , 23rd Conference of European Society for Cognitive Psychology, Porto (2 talks)	Sep 2023
COGSCI 2023 , 45th Annual Conference of the Cognitive Science Society, Sydney (2 posters)	Jul 2023
9th Annual Conference of Cognitive Science, ACCS 2022, IIT Delhi (2 talks, 2 posters)	Dec 2022
ICP 2021 - The 32nd International Congress of Psychology, Prague (1 talk - online)	Jul 2021
COGSCI 2020 , 42nd Annual Conference of the Cognitive Science Society, Toronto (1 poster)	Aug 2020
6th Annual Conference of Cognitive Science in India, ACCS 2019, BITS Goa (2 posters)	Dec 2019
Annual Summer Research Symposium, TIFR, Center For Interdisciplinary Sciences (1 poster)	Jul 2016

AWARDS AND GRANTS

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- + International Travel Support from Dept of Science and Technology, Govt of India for COGSCI, Sydney (2023)
 - + Work got awarded the Diversity and Equity award at 45th COGSCI 2023 (2023)
 - + Summer Research Fellowship grant of the Indian Academy of Sciences (2016)
 - + Best Poster- Annual Summer Research Symposium 2016, Tata Institute of Fundamental Research
 - + Selected for the reputed undergrad summer school of ComputerScienceAutomation, IISc Bengaluru (2017)
 - + Awarded the Best Summer Project, Globsyn Summer School of Training , Kolkata India (2017)

ALL 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-naïve sample and internet-savvy people

Effects of Self and Mother-Association Effects in an Indian sample (RA with Dr. Ark Verma) (article in QJEP)
Learnt basics, and then extensively contributed with the analysis and visualisation of data; contribution acknowledged

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 Techn (BTech Project-Guide: R Roychowdhury)
A unique audio-encryption & compression approach with transference of sound to visual medium- spectrophony.

Android Apps: Smart Vehicle Tracker & Integrated Pedometer (Summer Intern, Techsol Technologies)

Developed an integrated location-tracking application for international client serving a truck-delivery enterprise.

+ Co-curricular.**Innovation, Entrepreneurship and Economic Development** (Intern 2017- NITI Aayog, Govt of India):

-did data analysis and policy research on the inter-relation of critical factors in developing/developed economies.

"Social Inclusion, Digital Inclusion" (Dr.Somprakash Bandyopadhyay, Social Informatics, IIM Calcutta): Data assessment for online teaching-learning platform connecting underprivileged students w. retired teachers.

WORKSHOPS ATTENDED

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
Annual Conference of Cognitive Science India 2018, Indian Institute of Technology, Guwahati	Oct 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 tractography), Computational
Soft Skills:	Leadership, Cross-collaboration, Project Management, Client Delivery
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 COVERED

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 Excellent teacher, Outstanding Rotaractor Award for Rotaract Heritage (2015-16)

Second Runners up in the Presidency National Parliamentary Debate Tournament

REFERENCES**Dr Urvakhsh Mehta**

Professor, Psychiatry, National Institute of Mental Health and Neuro Sciences (NIMHANS), India
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Dr Ark Verma

Assistant Professor, Department of Cognitive Sciences, Indian Institute of Technology, Kanpur
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Dr Harish Karnick

Emeritus Fellow, Department of Cognitive Sciences, Indian Institute of Technology, Kanpur
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Dr Christopher Krupenye

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