

# NEELABJA ROY

— *MS (by Research) graduate, Cognitive Science, Indian Institute of Technology Kanpur* —  
4th floor, 8A Nepal Bhattacharjee Street, Kolkata-700026, West Bengal, India  
web: neelabja.github.io ♦ Ph:(+91)8902498031 ♦ email: neelabja.iitk@gmail.com

About: aspires to research and explain the nuances behind the emergence & functioning of cognitive factors

## EDUCATION

---

### Indian Institute of Technology, Kanpur

Master of Science (by Research) - MS (by Research) Cognitive Science

*August 2018 - October 2021*

*GPA: 9.44/10*

### Heritage Institute of Technology, Kolkata

(affiliated to MAKAUT, formerly West Bengal University of Technology, India)

Bachelor of Technology, Computer Science and Engineering

*August 2014 - June 2018*

*GPA: 7.78/10*

## PROFESSIONAL & RESEARCH EXPERIENCE (ALL DETAILED)

---

### + Professional Association:

**Researcher, Dr Urvakhsh Mehta, National Institute of Mental Health & Neuro Sciences** (Oct '22-)  
comparative fMRI analyses for Wellcome Trust funded study comparing neural correlates between normative & schizoid populace in ToM tasks; behavioral data analyst [for SHARP project- Harvard Medical School]

**Project Research Associate, Language and Cognition Lab, IIT Kanpur** - (Jan to Sep 22)

– Led multiple projects (including assisting a doctoral project) investigating and modelling the consequences of varying social preferences in perceptual-response tasks of memory, attention and economic decision-making.  
– Additionally testing the effects of handedness and laterality in the processing of social and perceptual stimuli.

**Analyst (Bengal State Lead, Strategic Research Insights), IndianPAC Consulting** - (Feb-Dec '21)

Informing voter choices, policy preferences for demographic groups in the West Bengal State Elections 2021

### + Ongoing Academic Collaborations with:

**Dr Christopher Krupenye, Psychological & Brain Sciences, Johns Hopkins University** (June '22 -)  
Analysing the factors behind the partner-choice patterns in coalition-solicitation by chimpanzees during conflicts

**Dr Pragathi Balasubramani, Translational Neuroscience & Technology Lab, IIT-K** (April '22-)

Designing an audition-substitution device to translate social sounds to tactile feedback patterns for deaf patients

### + All Other Past Projects.

**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  
Tested if self-referent prioritisation accorded previously only to single neutral exemplars is generalisable to entire collectives of familiar/unfamiliar stimuli through the common simple-features; and if even such basic associations can tease out differential intergroup attitudes of Approach/Avoidance towards the whole group-category.

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

Based on an agent-based model system, we developed a primitive, resource-constrained society of explorers and exploiters, & tested if and how cooperation in communication would yield fitter societies as well as out-compete other societies with lower levels of cooperation (again, in terms of communication) in resources and fitness.

**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)

Eye-tracking study and analysis, on the differences between internet-naive sample and internet-savvy people to investigate the effects of regular hyperlinked method of browsing on attention span and reading habits.

**Effects of Self and Mother-Association Effects in an Indian sample** (RA with Dr. Ark Verma)

(article published at QJEP) acknowledged for my contribution with research and data analysis

## **Using the Model of Motor Planning in Self to Recognise Motor Action in Others**

(Summer Research Fellowship Program-Indian Academy of Sciences 2016; CNCS, Dr Joby Joseph, India)

Applying an ANN to try to model a mirror-neurons based system that learns to recognise and imitate motor actions of Others by using the model of body-ownership, action recognition, planning and execution in self

## **Paleokymophony - A Novel Approach to Audio-Encryption Technique**

(Bachelor of Technology Final Year Project - HIT, Kolkata. Guide: Prof. Reshma 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.

## **ACADEMIC 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]– ACCS’22 conference accepted abstract link

– Roy N., Karnick H. & Verma A. Evidence for the Generalisation of the Self-Prioritization Effect based on Similarity (Submitted - under Review)

– Roy N., Mehta U., Posterior cerebellar resting-state functional connectivity: A stable neural marker across the developmental course of schizophrenia (to be submitted for review)

– (Acknowledged for Contribution) Verma A, Jain A, Srinivasan N. Yes! I love my mother as much as myself: Self- and mother-association effects in an Indian sample. *Quarterly Journal of Experimental Psychology.* 2021;74(12):2210-2220. doi:10.1177/17470218211033118 [link]

### **+ 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 Annual Conference of the Cognitive Science Society, COGSCI 2023 [link] —ACCS’22 conference accepted abstract 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 Annual Conference of the Cognitive Science Society, COGSCI 2023 [link] –ACCS’22 accepted abstract 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 S. Denison., M. Mack, Y. Xu,& B.C. Armstrong (Eds.), Proceedings of the 42nd Annual Conference of the Cognitive Science Society (p.1423). [Abstract link]

– Neelabja Roy & Harish Karnick (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 (PRESENTED WORK IN)[links]**

---

<b>COGSCI 2020</b> , 45th Annual Conference of the Cognitive Science Society, Sydney (2 works)	Jul, 2023
9th Annual Conference of Cognitive Science, ACCS 2022, IIT Delhi (4 works)	December 2022
<b>ICP 2021</b> - The 32nd International Congress of Psychology, Prague (1 work)	July 2021
<b>COGSCI 2020</b> , 42nd Annual Conference of the Cognitive Science Society, Toronto (1 work)	Aug, 2020
6th Annual Conference of Cognitive Science in India, ACCS 2019, BITS Goa (2 papers)	December 2019
Annual Summer Research Symposium, TIFR, Center For Interdisciplinary Sciences	July 2016

## WORKSHOPS ATTENDED

---

Diffusion Weighted Imaging Workshop (National Neuroimaging Facility, CBCS Allahabad)	June 2022
Winter School on Cognitive Modelling, Indian Institute of Technology Mandi	February 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	October 2018
5th Computer Science Undergraduate Summer School, Indian Institute of Science Bangalore	June 2017

## AWARDS AND GRANTS

---

- + Recipient of the Summer Research Fellowship 2016 grant of the Indian Academy of Sciences
- + 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 (2017)

## SKILLS

---

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

## MAJOR TOPICS COVERED

---

<b>Graduate:</b>	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
<b>Undergraduate:</b>	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  
email: urvakhsh@nimhans.ac.in

### Dr Harish Karnick

Emeritus Fellow, Department of Cognitive Sciences, Indian Institute of Technology, Kanpur  
email: hk@cse.iitk.ac.in

### Dr Ark Verma

Assistant Professor, Department of Cognitive Sciences, Indian Institute of Technology, Kanpur  
email: arkverma@iitk.ac.in

### Dr Christopher Krupenye

Assistant Professor, Department of Psychological and Brain Sciences, Johns Hopkins University, USA  
email: krupenye@jhu.edu

---