

Suhas Vijayakumar

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While I have always been interested in the neuroscience of learning, my appreciation towards the field of comparative neuroscience only grew during the course of my PhD. Currently, instead of choosing one of these fields, I am in search of exciting ways to integrate the two.

Employment

Post-doctoral fellow December 2019 – *present*
Human Evolutionary Biology, Harvard University CAMBRIDGE, MA

At the [Evolutionary Neuroscience Laboratory](#) of Dr. Erin Hecht, I am involved in studying the neuroanatomical changes that accompany skill acquisition. Also, using neuroimaging techniques and individual behavioural differences, we are working towards understanding the relation between structural changes in the brain and individual differences in tool use across species.

Education

PhD 2015 – 2019
Donders Institute for Brain, Cognition and Behaviour NIJMEGEN, THE NETHERLANDS

At the [Cognitive Neuroecology Lab](#) of the Donders Institute, I studied the parietal-frontal networks in macaques and humans using resting state connectivity under the supervision of Dr. Rogier B. Mars and Prof. Dr. Pieter Medendorp. We also studied the function of these networks particularly in orienting visual and auditory attention in humans using structural and functional neuroimaging methods.

Research Master's in Cognitive Neuroscience 2013 – 2015
Radboud University Nijmegen NIJMEGEN, THE NETHERLANDS

Master's thesis: Can you predict other's preferences?
An fMRI study was designed to recognise the neural correlates of social group knowledge acquisition and to understand how this knowledge is integrated with prior information, to form predictions about other's behaviour. Hypotheses were based on the predictive coding framework, under the supervision of Dr. Egbert Hartstra and Prof. Dr. Harold Bekkering.

Bachelor of Science in Physics, Mathematics, and Electronics 2009 – 2012
St. Joseph's College of Arts and Science BENGALURU, INDIA

Publications

- Neural mechanisms of predicting individual preferences based on group membership.
Vijayakumar S, Hartstra E, Mars RB, & Bekkering H. (2020) (accepted) in *Social Cognitive and Affective Neuroscience*.

- Longitudinal connections and the organization of the temporal cortex in macaques, great apes, and humans.
Roumazeilles L, Eichert N, Bryant KL, Folloni D, Sallet J, **Vijayakumar S**, Foxley S, Tandler BC, Jbabdi S, Reveley C, Verhagen L, Dershowitz LB, Guthrie M, Flach E, Miller KL, Mars RB (2020) *PLoS Biol* 18(7): e3000810. doi: 10.1371/journal.pbio.3000810
- Mapping multiple principles of parietal-frontal cortical organization using functional connectivity.
Vijayakumar S, Sallet J, Verhagen L, Folloni D, Medendorp WP, & Mars RB (2019). *Brain Structure and Function* 224:681-697 doi: 10.1007/s00429-018-1791-1
- Lateral frontal pole and relational processing: Activity patterns and connectivity profile.
Hartogsveld B, Bramson B, **Vijayakumar S**, Van Campen AD, Marques JP, Roelofs K, Toni I, Bekkering H, & Mars RB (2018). *Behavioural Brain Research* 355:2-11. doi: 10.1016/j.bbr.2017.08.003
- Oops – That was a Mistake! How Toddler Brains React to Feedback.
Meyer M, **Hassan Vijayakumar S**, Bekkering H, Janssen D, de Bruijn E & Hunnius S (2015). *Front Young Minds*. 3:13. doi: 10.3389/frym.2015.00013
- Emotional responses to Hindustani Raga music: The role of musical structure.
Mathur A, **Vijayakumar SH**, Chakrabarti B, & Singh NCP (2015). *Frontiers in Psychology*, 6. doi: 10.3389/fpsyg.2015.00513

Awards and scholarships

- Radboud talks 2019** Mar 2019
Received a personal science communication budget of 1000 euros for winning the university-wide Radboud talks competition [link].
- Erasmus+ Staff Training** Apr 2016
Travel grant to visit Oxford for two weeks to witness data collection, receive training in data analyses techniques, and develop better understanding of macaque neuroanatomy.
- Radboud Scholarship Programme** Sep 2013 – Sep 2015
Scholarship awarded to a selected few non-European students to pursue an English-taught Master's degree programme at Radboud University. In my case, for research master's in cognitive neuroscience.

Conferences

- OHBM: Organization for Human Brain Mapping** Jun 2019
Poster: Connectional topographies of human and macaque inferior parietal lobe.
Vijayakumar S, Freches GB, Sallet J, Klein-Flugge M, Jensen D, Medendorp WP, Mars RB.
- ICON: International Conference for Cognitive Neuroscience** Aug 2017
Poster: Complex organization of primate frontal-parietal cortex.
Vijayakumar S, Verhagen L, Sallet J, Folloni D, Medendorp WP, Mars RB.

Public outreach

- Webinar: invited talk** Jun 2020
Gave an online public talk titled "Human brains are special. Are they really?" at my alma mater St. Joseph's College, Bengaluru, India. [link].
- Pint of Science** May 2019
Invited speaker at Pint of Science Maastricht, NL. Scientists across 24 countries share their discoveries and experiences with the public at a local cafés, for 3 days in May.
- Pub talk** Feb 2019
Delivered an informal talk on "What's special about the human brain?"
- Neuro Nuggets** Nov 2017 (ongoing)
Started a YouTube series in which, researchers talk about their beginnings in the field of neuroscience.

Teaching

Teaching assistant

2015 - 2018

General introduction to Psychology
Academic and Professional Skills
Academic Writing and Reviewing

Brain and Cognition: Introduction
Brain for AI
Research practicals: Mental Strain and Stress

Lectures

- "Notes and Tips from an early-stage researcher" [slides]
- "How to give great presentations?" [slides]

Skills

Technical expertise

Certified MR scanner user
Programming Languages
Scripting Languages

Siemens 3T (Prisma, PrismaFit, Skyra)
Matlab, Presentation, shell scripts
HTML, PHP, MySQL

Spoken languages

Kannada (*native*), English (*professional proficiency*), Hindi (*professional proficiency*).

Research experience

Student Assistant (Radboud University Nijmegen)

NIJMEGEN, THE NETHERLANDS
Mar '14 – Mar '15

Brain Computer Interface Laboratory
Advisor: Dr. Makiko Sadakata

Auditory Perceptual Learning with Neurofeedback

Mainly collected EEG data for this project, which trained participants to recognise subtle differences in pitch to facilitate language learning by providing online neurofeedback.

Research Assistant (National Brain Research Centre)

MANESAR, INDIA
Aug '12 – Jun '13

Speech and Language Processing Laboratory
Advisor: Dr. Nandini C. Singh

Music-Emotion Study: Web-based Survey

Following my summer internship at the lab, I was hired to conduct an *online study*, the first of its kind in India, to test whether *rāgās* from Hindustani Classical Music induced unique set of emotions.

Neural Correlates of Silent-Covert-Overt Reading Modes

The main focus of the study was to delineate the key brain regions involved in reading across silent, covert, and overt reading modes in bilinguals. This was my first hands-on fMRI study, which introduced me to cognitive design, fMRI technique, single-subject and group-level analysis of BOLD signal data using *SPM8*.

References

References available upon request.
