Dr. Supriya Ray

Centre of Behavioural and Cognitive Sciences
University of Allahabad, Senate Hall Campus
Allahabad. Uttar Pradesh 211002. India
Email: sray@cbcs.ac.in , ray.supriyo@gmail.com
Phone: +91-9956307778 (M); +91-0532- 2460738 (O)

Positions Held

Aug. 2013 – Present	Assistant Professor at Allahabad University
Feb. 2014 – Jan. 2019	Intermediate Fellow of Wellcome Trust India Alliance
Oct. 2012 – Jul. 2013	Research Associate at State University of New York, USA
Nov. 2009 – Sep. 2012	Post-Doctoral Fellow at Smith-Kettlewell Eye Res. Inst., USA.
Sep. 2007 – Oct. 2009	Research Associate at Vanderbilt University, USA.

Education

2007 **Ph. D** in Neuroscience (National Brain Research Centre, India)

2000 **M. Tech** in Computer Science & Engineering (Calcutta University, India)

1998 **B. Tech** in Computer Science & Engineering (Calcutta University, India)

1995 **B. Sc** in Physics (Calcutta University, India)

Research Interest

My research team in Allahabad University studies neuroscience of decision making, sequential eye movements, attention, and executive control using three complementary techniques: electrophysiology, psychophysics, and simulation of computational models. Our long-term scientific goal is to understand neural mechanisms underlying different cognitive processes engaged in control of coordinated movements of the eyes and hand.

Teaching Experience

1. Introduction to Programming (M.Sc. 1st Semester)
2. Computational models of Cognition (M.Sc. 2nd Semester)
3. Action (M.Sc. 3rd Semester)
4. Computational Neuroscience (M.Sc. 4th Semester)

Publications and Presentations

Journal Articles:

1. Indrajeet, I., & **Ray, S**†. (**2019**). Detectability of stop-signal determines magnitude of deceleration in saccade planning. **European Journal of Neuroscience**, 49(2), 232-249.
2. **Ray S**†, Heinen SJ (**2015**) A mechanism for decision rule discrimination by supplementary eye field neurons. **Experimental Brain Research** 233 (2), 459-476.
3. Bhutani N, **Ray S**, Murthy A† (**2012**) Is saccade averaging determined by visual processing or movement planning? **Journal of Neurophysiology** 108(12): 3161-3171.
4. **Ray S**†, Bhutani N, Murthy A (**2012**) Mutual Inhibition and Capacity Sharing during Parallel Preparation of Serial Eye Movements. ***Journal of Vision.*** 12(3):17, 1–22
5. **Ray S**, Bhutani N, Kapoor V, Murthy A† (**2011**) Trans-saccadic Processing of Visual and Motor Planning during Sequential Eye Movements. ***Experimental Brain Research***. 215(1):13-25.
6. **Ray S**†, Pouget P, Schall JD (**2009**) Functional Distinction between Visuomovement and Movement Neurons in Macaque Frontal Eye Field during Saccade Countermanding. ***Journal of Neurophysiology***. 102(6):3091-3100.
7. Murthy A, **Ray S**, Shorter SM, Schall JD†, Thompson KG (2009) Neural Control of Visual Search by Frontal Eye Field: Effects of Unexpected Target Displacement on Visual Selection and Saccade Preparation. ***Journal of Neurophysiology***. 101(5): 2485-2506.
8. Murthy A†*, **Ray S***, Shorter SM, Priddy E, Schall JD, Thompson KG (2007) Frontal Eye Field Contributions to Rapid Corrective Saccades. ***Journal of Neurophysiology***, 97 (2), 1457-1469.
9. **Ray S,** Schall JD, Murthy A† (2004) Programming of Double-Step Saccade Sequences: Modulation by Cognitive Control. ***Vision Research***. 44(23): 2707-2718.

†*Corresponding author;* **Authors contributed equally; Reprints*: http://publicationslist.org/supriya.ray

Book Chapter:

- Sharika KM, **Ray S**, Murthy A (**2009**) Attention for Action during Error Correction. *In* ***Progress in Brain Research*** (Elsevier) 176:227-244.

Recent selected presentation/invited talk:

- "Saccadic chronostasis during sequential eye movements" [The Scandinavian Workshop on Applied Eye Tracking at Copenhagen Business School Denmark in September 2018]
- "A Novel Behavioral Parameter for Estimation of Stopping Efficacy" [Indian Neuroscientists' Meeting at IISER Pune in October 2017]
- "The Interplay between Perception and Action in the Oculomotor Domain" [The 25th meeting of the IERG (Indian Eye Research Group) ARVO India at L V Prasad Eye Institute Hyderabad in July, 2018].
- "A neurally viable model of sequential eye-movements" [The 7th International Workshop on Computation and Networking for Internet of Things and Beyond, ICDCN, at IIT-BHU in January, 2018]
- "Role of Visuospatial Attention in Control of Eye Movement" [Wellcome Trust India Alliance External Review Meeting, at The Taj Mahal Hotel New Delhi in January 2017]
- "Influence of attention on control of eye movement" [Young Researchers' Conference on Cognitive Science at University of Hyderabad, India in 2016]
- "Pull in the reins do not race: an inhibitory mechanism of stopping action" [3rd International Conference on Cognition, Brain & Computation at IIT-Gandhinagar, India in 2015]
- "Dissociation between attention for target selection and eye movement control" [2nd Annual Conference on Cognitive Science at IIT-Kanpur, India, 2015]

Research Grants

2015 – 2018	DST Cognitive Science Research Initiavite (Rs. 48,58,000/-)
2014 – 2019	Wellcome Trust DBT India Alliance (Rs. 2,25,00,000/-)

Technology used in laboratory

Programming Languages:	Matlab, C and C++
Software:	Tempo/ Videosync (*Reflective Computing*); LabView (*National Instruments*); E-Prime (*Psychology Software Tools*); SigmaStat.
Simulation Tool:	Simulink in Matlab
Instrumentations:	Infra-red eye trackers (*ASL, ISCAN and EyeLink*); Touchscreen (*3M-Palas*); EEG (*Biosemi Active 2*); Electrophysiology data acquisition systems (*Plexon*)