

# MUKESH MAKWANA, Ph.D.

Cognitive Scientist | UX Researcher

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## Professional Summary

I am a cognitive scientist with a Ph.D. in Cognitive Science and extensive research experience in perception, attention, human behavior, and neuroscience. My expertise in experimental design, quantitative analysis, and understanding of human cognition directly translates to UX research methodologies.

I am eager to apply my rigorous scientific training and deep understanding of human cognition to UX research in educational technology. My experience with experimental design, statistical analysis, and human behavioral research positions me to conduct user research that is methodologically sound and practically impactful.

## Professional Experience

<b>Research Affiliate (Remote)</b>	Donoghue Lab, Department of Neuroscience, Brown University	2025 - Present   Providence, RI, USA
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- Advisors: Dr. Carlos Vargas-Irwin and Prof. John Donoghue
- Exploring sense-of-agency in individuals with tetraplegia using intracranial brain-computer interfaces
- Analyzing neural representation of subconsciousness perception

<b>Postdoctoral Research Associate</b>	Donoghue Lab, Brown University	2022 - 2024   Providence, RI, USA
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- Advisors: Dr. Carlos Vargas-Irwin and Prof. John Donoghue
- Conducted neuroscience research on neural decoding of complex reaching and grasping actions
- Developed expertise in video-based markerless motion capture tools and neural data analysis (DeepLabCut, Anipose)
- Investigated motor cortex neural signatures for action representation

<b>Postdoctoral Research Associate</b>	Perception, Action & Cognition Lab, Brown University	2019 - 2022   Providence, RI, USA
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- Advisor: Prof. Joo-Hyun Song
- Investigated selection history mechanisms using reach tracking and computational modeling
- Studied role of emergent motor timing on time perception through sports-based training research
- Analyzed individual differences in inhibitory control using choice reaching tasks

<b>Visiting Researcher</b>	Learning Sciences Research Group, Homi Bhabha Centre for Science Education, TIFR, India	2018 - 2019   Mumbai, India
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- Advisor: Prof. Sanjay Chandrasekharan
- Investigated effects of ambidextrous training on attention networks and cognitive control in school children
- Research accepted as paper in Proceedings of Cognitive Science Society conference 2019

## **Education**

<b>Ph.D. in Cognitive Science</b>	Centre of Behavioural and Cognitive Sciences (CBCS), University of Allahabad, India	2011 - 2018
<ul style="list-style-type: none"><li>• Advisor: Prof. Narayanan Srinivasan (now at IIT, Kanpur)</li><li>• Thesis: Role of intention and prediction in time perception and sense of agency</li><li>• Research on role of self-association on time perception and sense of agency</li><li>• Investigated mindfulness meditation effects on Self-Other distinction</li><li>• Studied how social context influences time perception</li></ul>		
<b>M.Sc. in Biotechnology</b>	University of Mumbai, India	2008 - 2010
<b>B.Sc. in Biotechnology</b>	University of Mumbai, India	2005 - 2008

## **Research Skills**

### **Experimental Design**

- Behavioral Experiments
- Psychophysical Methods
- Motion Tracking
- EEG Data Collection
- Neural Data Recording
- Longitudinal Studies

### **Data Analysis & Tools**

- MATLAB
- R Programming
- Python
- SPSS
- Statistical Analysis
- Computational Modeling
- DeepLabCut

### **Research Domains**

- Perception & Attention
- Time Perception
- Human Action & Agency
- Social Cognition
- Neuroscience
- Educational Research

## **Awards & Recognition**

- Zimmerman Innovation Award in Brain Science (2021) - \$50,000 award for quantitative evaluation of sense of agency during brain-computer interface use
- Best Poster Award, Annual Conference of Cognitive Science (2016)
- Best Poster Award, International Conference on Consciousness Studies (2012)
- CSIR Senior Research Fellowship (2014-2017) for PhD
- CSIR Junior Research Fellowship (2012-2014) for PhD
- Multiple competitive travel awards: AVA Tom Tronscianko, VSS, ECVP, DST, Jacobs Foundation

## **Teaching & Mentorship**

- Guest lecturer for "Development and Social Perception" (Brown University, 2021)
- Guest lecturer for "Neuroscience of Vision" (University of Allahabad, 2016-2017)
- Guest lecturer for "Eastern and Western culture on visual perception" (2014-2015)
- Mentored students in Leadership Alliance Summer Research Program (2020, 2021)
- Teaching assistant for "Learning and Cognitive Development" PhD course (2018)

## **Publications**

*Journal Articles (\* co-first author, equal contribution, first position interchangeable)*

- Guo, J., Zhang, Z., **Makwana, M.**, Sternad, D., & Song, J.H. (2025). Emergent Motor Timing Enhances Time Perception. *iScience*, *28*(9)113367.
- **Makwana, M.\***, Zhang, F.\*, Heinke, D., & Song, J. H. (2025). Characterizing individual differences in selection history bias manifested in goal-directed reaching movements. *Attention, Perception, & Psychophysics*, 1-12.
- **Makwana, M.\***, Zhang, F.\*, Heinke, D., & Song, J. H. (2023). Continuous action with a neurobiologically inspired computational approach reveals the dynamics of selection history. *PLOS Computational Biology*, *19*(7), e1011283.
- **Makwana, M.\***, Wilmott, J. P.\*, & Song, J. H. (2022). Target detection and discrimination in pop-out visual search with two targets. *Attention, Perception, & Psychophysics*, 1-15.
- **Makwana, M.\***, Chiarella, S. G.\*, Simione, L., Hartkamp, M., Calabrese, L., Raffone, A., & Srinivasan, N. (2020). Mindfulness meditation weakens attachment to self: Evidence from a self vs other binding task. *Mindfulness*, *11*, 2411-2422.
- Tewari, S., **Makwana, M.**, & Srinivasan, N. (2020). Group congruent labelling leads to subjective expansion of time. *Royal Society open science*, *7*(11), 201063.
- **Makwana, M.**, & Srinivasan, N. (2019). Self-associated stimuli produce stronger intentional binding. *Journal of Experimental Psychology: Human Perception and Performance*, *45*(11), 1436-1442.
- **Makwana, M.**, & Srinivasan, N. (2017). Intended outcome expands in time. *Scientific Reports*, *7* (6305). doi: 10.1038/s41598-017-05803-1
- Srinivasan, N., Tewari, S., **Makwana, M.**, & Hopkins, N. P. (2015). Attention mediates the effect of context-relevant social meaning on prospective duration judgments. *Timing & Time Perception*, *3*(3-4), 189-200.

## ***In preparation***

- Molina, R., Conde, D., Ziemann, C., Estrada, H., Moreno, A., Lopez, B. A., Odell, R., **Makwana, M.**, & Mishra, M.V. *Exploring eye gaze behavior during face matching task.*
- Johnson, M., Machuca, C., **Makwana, M.**, Wolfe, J., & Mishra, M.V. *Spatial memory capacity for familiar faces.*
- Tinoco, F., Conlon, J., **Makwana, M.**, & Mishra, M.V. *Effect of baseball fandom on perception of crowd emotion.*
- Conlon, J., Tinoco, F., **Makwana, M.**, & Mishra, M.V. *Effect of political affiliation on perception of crowd emotion.*