

Exponent®
Engineering & Scientific Consulting

Prachi Mahableshwarkar, Ph.D.

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Professional Profile

Dr. Prachi Mahableshwarkar is a cognitive scientist specializing in human behavior and visual perception, with particular expertise in spatial processing. She examines human factors in various contexts, including medical devices, product design (e.g., virtual reality), and transportation. She leverages her expertise in psychophysics, behavioral modeling, and usability testing to help evaluate user behavior and product efficacy.

Dr. Mahableshwarkar's expertise spans technical, clinical and research settings, focused on investigating how visual cues inform 3D spatial perception and human-computer interaction. She is skilled in applying this knowledge to improve product system design and predict user errors. Dr. Mahableshwarkar has a strong technical background with experience implementing large scale experimental studies and is proficient in data and statistical analysis. Her expertise allows her to analyze human factors issues and user behavior in medical devices, driver behavior, visibility, attention and distraction, and product design.

Dr. Mahableshwarkar earned her PhD in Psychological and Brain Sciences from The George Washington University where she focused on natural scene perception and the interaction between spatial processing and participant expectations. She developed models of human visual cognition that can predict errors in distance judgments under high workload, aging, or situations that require rapid judgmemts (e.g., driving). Additionally, she has applied her expertise to conduct formative usability testing on a virtual reality medical training device in collaboration with Children's National Hospital in Washington DC.

Dr. Mahableshwarkar specializes in strengthening the quality of online data collection and has developed open source guides and tools to accelerate research workflows and enhance the rigor of clients' research needs.

Academic Credentials & Professional Honors

Ph.D., Cognitive Neuroscience, The George Washington University, 2024

B.S., Cognitive Neuroscience, Carnegie Mellon University, 2019

Nu Rho Psi, Psi Chi, Mortar Board

Prior Experience

Graduate Researcher, The George Washington University, 2019-2024

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Professional Affiliations

American Psychological Association

Vision Science Society (VSS)

Publications

Mahableshwarkar P., Houck L., Philbeck J., Kravitz D.J. (2025). "Distance perception in natural scene images generalize across individuals, tasks, and viewing time," Journal of experimental psychology. General, 10.1037/xge0001741.

Meng, Y., Zhao, S., Zhang, X., Philbeck, J., Mahableshwarkar P., Feng, B., Soghier, L., & Hahn, J. (2025). "Effect of Cognitive Distractors on Neonatal Endotracheal Intubation Performance: Insights from a Dual-Task Simulator," Virtual Worlds, 4(2), 20.

Presentations

Mahableshwarkar, P.S., Kravitz, D.J., Philbeck, J.W. A Novel Generalization between Verbal Judgments and Perceptual Discrimination of 3D Space. Presentation, Psychonomic Society's Annual Meeting, Boston, MA, 2022.

Mahableshwarkar, P.S., Kravitz, D.J., Philbeck, J.W. A Novel Generalization between Verbal Judgments and Perceptual Discrimination of 3D Space. Presentation, OPAM, Boston, MA, 2022.

Mahableshwarkar, P.S., Philbeck, J.W., Kravitz, D.J. A Novel Generalization between Verbal Judgments and Perceptual Discrimination of 3D Space. Poster presentation, Science Society Annual Meeting, St. Petersburg Beach, FL, 2022.

Mahableshwarkar, P.S. & Philbeck, J.W. Remembered environmental context facilitates distance perception in early stages of brief glimpses. Poster presentation, Virtual-Vision Science Society Annual Meeting; June 2020.

Peer Reviews

Attention, Perception, & Psychophysics