

Assistant Professor
Psychology Department, Mississippi State University

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Academic Appointments

Assistant Professor, Tenure-Track Dept. of Psychology Mississippi State University	2026–
Postdoctoral Research Fellow, Dept. of Cognitive Science Johns Hopkins University Supervisor: Professor Leyla Isik	2025–2026
Postdoctoral Research Fellow, Dept. of Psychological & Brain Sciences Johns Hopkins University Supervisor: Professor Jason Fischer	2023–2025

Education

PhD in Cognitive Science, Brown University Dissertation: “The Online Processing of Dynamics” Committee: Professors Fulvio Domini, William Warren, Jordan Taylor, & Roland Fleming	2017-2023
MA in Cognitive Science, Brown University	2017-2018
B.A. in Philosophy, University of California, Los Angeles Departmental Honors & Cum laude	2014-2016
A.A in Philosophy, Berkeley City College	2010-2013

Fellowships & Awards

International Society for Ecological Psychology (ISEP), William Mace Travel Award, International Conference on Perception and Action (ICPA), 2026
National Eye Institute (NEI) Early Career Scientist Travel Grant, Vision Sciences Society (VSS), 2026
Betty R.H. and James M. Pickett Fellowship Fund in Psychology. Brown University. 2021
Kenneth R. and Pamela L. Galner Fund. Brown University. 2019
Betty R.H. and James M. Pickett Fellowship Fund in Psychology. Brown University. 2018

Publications

Peer-Reviewed Articles

1. **Deeb, A.-R.** & Fischer, J., Velocity– not Perceived as such: The Role of Object Mass on Motion Estimation. *Journal of Experimental Psychology: General*. (in press/preprint available)
https://doi.org/10.31234/osf.io/e8tmw_v1
2. **Deeb, A.-R.**, Fengler, A., & Domini, F. (2026). The online processing of dynamics. *Cognition*, 270, 106416. <https://doi.org/10.1016/j.cognition.2025.106416>

3. **Deeb, A.-R.** & Domini, F. (2025) Relational Dynamics Inform Predictive Motor Planning and Weight Perception. *Journal of Neurophysiology*, 134(5).
<https://doi.org/10.1152/jn.00207.2025>
4. **Deeb, A.-R.** (2025) The Patchwork Approach: Toward a Perceptual Theory of Intuitive Physics. In *Proceedings of the Cognitive Science Society Conference*.
<https://escholarship.org/uc/item/63s4x0tk>
5. **Deeb, A.-R.** & Domini, F. (2024). Embeddedness of Earth's Gravity in Visual Perception. *Journal of Vision*, Volume 24(4).
<https://doi.org/10.1167/jov.24.11.4>
6. **Deeb, A.-R.**, Silva, A., & Liu, Z. (2022). Causality modulates perception of apparent motion stimuli. *Vision Research*, 201.
<https://doi.org/10.1016/j.visres.2022.108120>
7. **Deeb, A.-R.**, Cesanek, E., & Domini, F. (2021). Newtonian Predictions Are Integrated With Sensory Information in 3D Motion Perception. *Psychological Science*, 32(2), 280-291.
<https://doi.org/10.1177/0956797620966785>

Invited Colloquia & Talks

Egocentric computer vision as Proxy for Natural Experience.

The Egocentric Vision Group, Indiana University.
March 2026

Perceiving Motion Through the Statistics of Natural Experience.

McGill Vision Research, McGill University.
February 2026

The Perception of Dynamics: How visual experience reflects physical structure.

Department of Psychology, Yale University.
February 2026

Representation of Physics in the Sensorimotor System.

Psychological and Brain Sciences' third annual Early Career Colloquium series, JHU
May 2023.

Perceptual Learning of Physics in Multiple Contexts.

Centre for Vision and Visual Cognition, Durham University.
July 2021.

Temporal Perception of Relative Mass.

Department of Psychology, Giessen University.
March 2021.

Internalized Gravity and Kinematics in the Perception of 3D Objects.

Computational Cognitive Science Group, Massachusetts Institute of Technology (MIT).
November 2019.

Newtonian Predictions Are Integrated With Sensory Information in 3D Motion Perception.

Department of Psychology, Princeton University.
November 2018.

Newtonian Prediction is Utilized in the Perception of Colliding Objects.

Colloquium on Perception & Prediction, University of Edinburgh.
August 2018.

Conference Presentations

Deeb, A.-R. Talk: Velocity—Not Perceived as Such: Mass–Speed Coupling as an Experiential Regularity in Event Perception. In Event Perception Then and Now (Symposium with James Todd, Markus Lappe, Brian Scholl, & William Warren), International Conference on Perception and Action 2026, Omaha, NE.

Deeb, A.-R. (Organizer & Chair). Talk: *The Patchwork Approach: Toward a Perceptual Theory of Intuitive Physics*. In Perception as a Foundation for Common-Sense Theories of the World Symposium, Cognitive Science Society 2025, San Francisco, CA. With Judy Fan, Shari Liu, & Kevin Smith.
 Proceedings abstract: <https://escholarship.org/uc/item/05q9f3nz>

Deeb, A.-R., Poster: *The Patchwork Approach: Toward a Perceptual Theory of Intuitive Physics*. Cognitive Science Society 2025, San Francisco, CA.

Wang, J. Z., **Deeb, A.-R.**, Domini, F., & Kowler, E. Talk: *Predictive smooth pursuit eye movements reflect knowledge of Newtonian mechanics*. In Honoring the Contributions of Eileen Kowler: Eye Movements as Windows to the Mind, Eileen Kowler Memorial Symposium, Vision Science, Society, 2025. St. Petersburg, Florida.
<https://www.visionssciences.org/eileen-kowler-memorial-symposium>

Deeb, A.-R. & Fischer, J. Poster: *Velocity— not Perceived as such: The Role of Perceived Mass on Motion Estimation*. Vision Science Society, 2024. St. Petersburg, Florida. <https://doi.org/10.1167/jov.24.10.665>

Domini, F. & **Deeb, A.-R.** Talk: *Do we perceive the physical structure of the world? A case study of a falling object*. Scottish Vision Group, 2024 Stirling, Scotland.

Domini, F. & **Deeb, A.-R.** Talk: *Do we perceive the physical structure of the world? A case study of a falling object*. Conference of Experimental Psychologists (TeaP), 2024. Regensburg, Germany.

Wang, J. Z., **Deeb, A.-R.**, Domini, F., & Kowler, E. Talk: *Smooth pursuit eye movements incorporate the knowledge of Newtonian mechanics and other cues for motion prediction*. Vision Science Society, 2023. St. Petersburg, Florida.
<https://doi.org/10.1167/jov.23.9.5029>

Deeb, A.-R., Wu, D., & Domini, F. Talk: *Time & Dynamics: Temporally Updated Relative Mass Perception*. Vision Science, Society, 2022. St. Petersburg, Florida. <https://doi.org/10.1167/jov.22.14.3686>

Deeb, A.-R. & Domini, F. Talk: *Physics 101: The visual systems ability to learn and integrate Newtonian predictions*. Vision Science Society, 2021. St. Petersburg, Florida. <https://doi.org/10.1167/jov.21.9.2620>

Wang, J. Z., **Deeb, A.-R.**, Domini, F., & Kowler, E. Talk: *The role of knowledge of Newtonian mechanics in anticipatory smooth pursuit eye movements*. Vision Science Society, 2021. St. Petersburg, Florida.
<https://doi.org/10.1167/jov.21.9.2227>

Deeb, A.-R. & Domini, F. Talk: *How the Human Visual System Models Physics with Uncertainty*. Cognitive Vision: Integrated Vision and AI for Embodied Perception and Interaction, 2019. Boston, Massachusetts.

Deeb, A.-R. & Domini, F. Poster: *Embeddedness of Earth's Gravity in Perception & Action*. Vision Science Society, 2019. St. Petersburg, Florida. <https://doi.org/10.1167/19.10.285b>

Deeb, A.-R., Cesanek, E., & Domini, F. Talk: *Perception is Biased by Newtonian Predictions*. European Conference on Visual Perception 41st Annual Meeting, 2018. Trieste, Italy,

Teaching Experience

- 2023 Teaching Assistant & Guest Lecturer, “Making Decisions”, Cognitive, Linguistic, & Psychological Sciences 0220, Professor Steven Sloman, Brown University.
- 2022 Lead Teaching Assistant, “Animal Behavior”, Cognitive, Linguistic, & Psychological Sciences 0110, Professor Andrea Simmons, Brown University.
- 2021 Lead Teaching Assistant, “Perception & Mind” Cognitive, Linguistic, & Psychological Sciences 0500, Professor Joo-Hyun Song, Brown University.

- 2020 Lead Teaching Assistant, “Research Methods”, Cognitive, Linguistic, & Psychological Sciences 1901, Professor Leslie Welch, Brown University.
- 2020 Teaching Assistant, “Quantitative Methods in Psychology”, Cognitive, Linguistic, & Psychological Sciences 0900, Professor Jack Wright, Brown University.
- 2019 Teaching Assistant, “Making Decisions”, Cognitive, Linguistic, & Psychological Sciences 0220, Professor Steven Sloman, Brown University.
- 2019 “Mind, Brain, & Behavior”, Cognitive, Linguistic, & Psychological Sciences 0010, Co-designed with Dr Elena Festa, Brown University.
- 2018 Teaching Assistant, “Mind, Brain, & Behavior”, Cognitive, Linguistic, & Psychological Sciences 0010, Dr Elena Festa, Brown University.

Research Mentorship Experience

2025–	Nina, Li, Undergraduate Student	Computer vision extension of Patchwork Approach on physical and social perception.
2025–	Manasi Malik, PhD Student	Investigating how high-level social interpretations bias perception of spatial features.
2023–2025	Luis Rubio, Master’s Student	Real and virtual effects of gravity on distance perception and action.
2020-2023	Dustin Wu, Undergraduate Student	Practical methods of motion tracking, virtual reality, and robotics.

Service to the Profession & Institution

- Organizer & Chair, *Perception as a Foundation for Common-Sense Theories of the World* Cognitive Science Society Annual Meeting, San Francisco, CA, July 2025. With Judith Fan (Stanford), Shari Liu (JHU), & Kevin A. Smith (MIT)
- Organizer, Johns Hopkins University, Dept. of Psychological and Brain Sciences’ Early Career Colloquium Series
- Reviewer, Journal of Vision —review ranked “Exceptionally Good Review” by Editorial Board (2025)
- Reviewer, Cognition (2025)
- Reviewer, Journal of Experimental Psychology: General (2025)
- Reviewer, Cognitive Science Society Conference Proceedings (2025)
- Co-Organizer: Perception & Action Colloquia, Brown University, Cognitive, Linguistic, & Psychological Sciences
- Graduate Student Representative (Graduate Student Council), Brown University Health Wellness Collation
- Covid Safety Organizer, Brown University, Cognitive, Linguistic, & Psychological Science
- Social Chair, Brown University, Cognitive, Linguistic, & Psychological Sciences

Memberships

Association for Psychological Science
 Vision Sciences Society
 Cognitive Science Society