

# Srijita Karmakar

srijita@ucsb.edu | Personal Website | Google Scholar | GitHub | ORCID

## EDUCATION

---

### Ph.D. in Psychological and Brain Sciences

Vision and Image Understanding (VIU) Lab (Advisor: Miguel Eckstein)  
Cognition, Perception, and Cognitive Neuroscience  
University of California, Santa Barbara

2022–Present

GPA: 4.0/4.0

### B.S.–M.S. (5-Year Dual Degree) in Biological Sciences

Indian Institute of Science Education and Research, Kolkata  
Master's Thesis Advisor: Koel Das

2017–2022

GPA: 9.46/10

## PUBLICATIONS

---

### Peer-Reviewed Articles

**Karmakar, S.**, & Eckstein, M. P. (2025). The psychophysics of dynamic gaze-following saccades during search. *Journal of Vision*, 25(14), 14. <https://doi.org/10.1167/jov.25.14.14>

Dasgupta, D., Banerjee, A., Dutta, A., Mitra, S., Banerjee, D., Karar, R., **Karmakar, S.**, Bhattacharya, A., Ghosh, S., Bhattacharjee, P., & Paul, M. (2025). Decoding food solicitation techniques applied by free-ranging Hanuman langurs residing in an urban habitat. *Animal Cognition*, 28(1). <https://doi.org/10.1007/s10071-024-01925-y>

Klein, D. S., **Karmakar, S.**, Jonnalagadda, A., Abbey, C. K., & Eckstein, M. P. (2024). Greater benefits of deep learning-based computer-aided detection systems for finding small signals in 3D volumetric medical images. *Journal of Medical Imaging*, 11(04). <https://doi.org/10.1117/1.jmi.11.4.045501>

Dasgupta, D., Banerjee, A., Karar, R., Banerjee, D., Mitra, S., Sardar, P., **Karmakar, S.**, Bhattacharya, A., Ghosh, S., Bhattacharjee, P., & Paul, M. (2021). Altered Food Habits? Understanding the Feeding Preference of Free-Ranging Gray Langurs Within an Urban Settlement. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.649027>

### Under Review

Madinei, P.\*, **Karmakar, S.\*** Hoffing, R. C., Gervits, F., and Eckstein, M. P. (2025). IRIS: Intent Resolution via Inference-time Saccades for Open-Ended VQA in Large Vision-Language Models (\* equal contribution)

**Karmakar, S.**, & Das, K. (2025). Visual Exposure to Masked Faces Benefits Personally Familiar but Not Famous Face Recognition. *arXiv*. <https://doi.org/10.48550/ARXIV.2303.06031>

### In Preparation

**Karmakar, S.**, Liu, A. D., & Eckstein, M. P. Influence of contextual information in human and AI gaze judgments. In preparation.

**Karmakar, S.**, & Eckstein, M. P. Early peripheral information use in dynamic gaze-cued covert attention orientation. In preparation.

**Karmakar, S.**, & Eckstein, M. P. Gaze-following in naturalistic dynamic scenes: A review. In preparation.

## CONFERENCE PRESENTATION

---

**Karmakar, S., & Eckstein, M. P.** (May 2026). Influence of Scene Context on Eye Movements During Gaze Perception. *Vision Sciences Society Annual Meeting*, St. Pete Beach, FL. (Accepted, Poster)

Shehabi, S., **Karmakar, S., & Eckstein, M. P.** (May 2026). Covert vs. Overt Spatial Attention Effects on Scene Comprehension. *Vision Sciences Society Annual Meeting*, St. Pete Beach, FL. (Accepted, Poster)

**Karmakar, S., & Eckstein, M. P.** (July 2025). Temporal Dynamics of Peripheral Information Use During Covert and Overt Search with Dynamic Gaze Cues. *Gordon Research Conference on Eye Movements*, South Hadley, MA (Poster).

**Karmakar, S., & Eckstein, M. P.** (May 2025). The time course of foveal and peripheral information integration during dynamic gaze-cueing. *Vision Sciences Society Annual Meeting*, St. Pete Beach, FL. Abstract published in *Journal of Vision*, 25(9), 2034. <https://doi.org/10.1167/jov.25.9.2034> (Poster)

**Karmakar, S., & Eckstein, M. P.** (May 2024). Anticipatory orienting of covert attention with dynamic gaze cueing. *Vision Sciences Society Annual Meeting*, St. Pete Beach, FL. Abstract published in *Journal of Vision*, 24(10), 751. <https://doi.org/10.1167/jov.24.10.751> (Poster)

**Karmakar, S., & Eckstein, M. P.** (July 2023). Effect of Peripheral Information on Gaze-Following Strategies. *Gordon Research Conference on Eye Movements*, South Hadley, MA (Poster).

**Karmakar, S., & Eckstein, M. P.** (July 2023). Effect of Peripheral Information on Gaze-Following Strategies. *Gordon Research Seminar on Eye Movements*, South Hadley, MA (Talk).

**Karmakar, S., & Das, K.** (May 2022). Does visual experience with face masks aid face recognition during the COVID-19 pandemic? *Vision Sciences Society Annual Meeting*, St. Pete Beach, FL. Abstract published in *Journal of Vision*, 22(14), 3243. <https://doi.org/10.1167/jov.22.14.3243> (Poster)

## RESEARCH MENTORSHIP

---

**Research Mentor, Bridge Scholars Program** 2025–Present  
VIU Lab, Psychological & Brain Sciences, UC Santa Barbara  
Supervise two undergraduate scholars in eye-tracking methods, data analysis, and human–AI model comparisons as part of a program supporting first-generation and historically underrepresented students.

**Senior Thesis Mentor** 2024–2025  
VIU Lab, Psychological & Brain Sciences, UC Santa Barbara  
Supervised an undergraduate Senior Thesis project examining gaze-cue perception with and without contextual information in humans and AI large language models.  
The student presented this work at a university-wide undergraduate research conference (URCA).

**Research Mentor, PSY99/199 Research Assistants** 2022–Present  
VIU Lab, Psychological & Brain Sciences, UC Santa Barbara  
Mentor and train 4–12 undergraduate research assistants per quarter in multi-session psychophysics experiments, eye-tracking, and EEG data collection.  
I also teach MATLAB/Python programming, lead coding and journal discussions, and deliver lectures on attention, eye movements, and EEG.  
Mentees have secured university research fellowships (CIRM COMPASS 2-year paid research internship) and received competitive excellence awards (Thomas Moore Storke Award for Excellence).

## TEACHING

---

**Graduate Teaching Assistant** 2022–Present  
*Department of Psychological & Brain Sciences, UC Santa Barbara*  
PSY129L Lab in Perception (3 quarters)  
PSY130 Perception and Vision (2 quarters)

PSY120L Advanced Research Methods (1 quarter)  
PSY10A Research Methods (1 quarter)  
PSY10B Statistics (1 quarter; Lead TA)  
Responsibilities include leading weekly lab discussion sections, holding office hours, developing quiz materials, grading laboratory reports, and proctoring exams. Coordinated a team of five TAs for PSY10B.

**Undergraduate Teaching Assistant** 2021–2022  
*Indian Institute of Science Education and Research (IISER) Kolkata*  
LS2201 Evolutionary Biology; LS3102 Cell Biology.  
Responsibilities included proctoring, grading, and leading discussions.

## AWARDS & SCHOLARSHIPS

---

**Grad Slam Preliminary Round Runner-Up Prize** 2025  
UCSB Graduate Division

**Nominee, Excellence in Teaching Award** 2025  
UCSB Graduate Students Association

**UGC-NET Junior Research Fellowship (JRF)** 2022  
Government of India  
Percentile: 99.44; Rank: 100

**DST-INSPIRE Scholarship** 2017  
Department of Science and Technology – Innovation in Science Pursuit for Inspired Research,  
Government of India  
Ranked among the top 10 scholars

**Jagadish Bose National Talent Search (JBNSTS) Junior Scholar** 2015  
Government of West Bengal, India

## PROFESSIONAL DEVELOPMENT

---

**Public Speaking Certification** 2025  
UCSB Graduate Division, Professional Development

**Neuromatch Academy – Computational Neuroscience** 2022  
Intensive international summer program in computational neuroscience, modeling, and machine learning.

## SERVICE AND OUTREACH

---

**Access Grads Mentor** 2023–Present  
*Department of Psychological & Brain Sciences, UC Santa Barbara*  
Mentor 2–3 undergraduate students annually interested in graduate study, guiding them through research development and application preparation. Mentees have secured internship positions in their areas of interest.

**Community Science Educator, Ek Pehal Initiative** 2018–2020  
*Indian Institute of Science Education and Research (IISER) Kolkata*  
Volunteered as a science and mathematics instructor for children from underserved communities through a student-led outreach program.

**Member, IKQRAAR (IISER-K Queer Resolution and Allies of the Rainbow)** 2020–2022  
*Indian Institute of Science Education and Research (IISER) Kolkata*  
Member of a campus initiative promoting LGBTQ+ inclusion and allyship.

## TECHNICAL SKILLS

---

**Programming:** Python (PsychoPy, PyTorch), MATLAB (Psychtoolbox, EEGLAB), R, Git (version control), Jupyter, Linux

**Computational Modeling:** Bayesian inference, Bayesian ideal observers, neural networks, deep learning, machine learning, vision-language models

**Methods:** Eye tracking (EyeLink), EEG, reverse correlation, psychophysics

**Software:** Adobe Photoshop, Adobe Premiere Pro, Blender, FreeSurfer, L<sup>A</sup>T<sub>E</sub>X, Visual Studio Code

## CREATIVE WORK

---

**Author, *Notes to Self, Letters to the World*** 2023  
Published a collection of original poetry and songs.

**First Prize, Sci-Poetry Competition** 2021  
Science-poetry competition organized by the IISER-K Literary and Science Clubs.

## LANGUAGES

---

**Bengali** (Native),   **Hindi** (Fluent),   **English** (Fluent),   **Spanish** (Basic)