Srijita Karmakar

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

EDUCATION

Ph.D. in Psychological and Brain Sciences   2022–Present
Vision and Image Understanding (VIU) Lab (Advisor: Miguel Eckstein)   GPA: 4.0/4.0
Cognition, Perception, and Cognitive Neuroscience
University of California, Santa Barbara

B.S.–M.S. (5-Year Dual Degree) in Biological Sciences   2017–2022
Indian Institute of Science Education and Research, Kolkata   GPA: 9.46/10
Master's Thesis Advisor: Koel Das

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

Karmakar, S., & Das, K. (in press). Visual Exposure to Masked Faces Benefits Personally Familiar but Not Famous Face Recognition. *Frontiers in Psychology*

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)*

In Preparation

Karmakar, S., Liu, A. D., & Eckstein, M. P. (in prep). Influence of contextual information in human and AI gaze judgments.

Karmakar, S., & Eckstein, M. P. (in prep). Early peripheral information use in dynamic gaze-cued covert attention orientation.

Karmakar, S., & Eckstein, M. P. (in prep). Gaze-following in naturalistic dynamic scenes: A review.

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, LaTeX, 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)