Stanford

Akshita Rao

- Ph.D. Student in Bioengineering, admitted Autumn 2022
- SU Student - Summer, Summer Session

Bio

BIO

Akshita (she/her) is a Bioengineering PhD candidate in the Neural Interaction Lab at Stanford, where she studies how brain-body dynamics during human sleep contribute to key functional processes using multimodal electrophysiology and wearable sensing. She is broadly interested in neural and autonomic signal processing and developing quantitative methods to understand multi-timescale coordination in human physiology.

HONORS AND AWARDS

- Wu Tsai Human Performance Research Fellowship, Wu Tsai Human Performance Alliance (2025-27)
- Stanford Graduate Fellowship in Science & Engineering, Office of the Vice Provost for Graduate Education (2023-25)
- Molecular Biophysics Program Trainee at Stanford, National Institute of Health, National Institute of General Medical Sciences (2022-23)
- NSF FAST-TRAC Scholarship, National Science Foundation, Tufts University (2022)
- De Florez Prize in Human Engineering, Tufts University (2020)

EDUCATION AND CERTIFICATIONS

- MS, Tufts University , Bioengineering (2022)
- BS, Tufts University , Mechanical Engineering, Biomedical Engineering (2021)

LINKS

- LinkedIn: https://www.linkedin.com/in/akshitarao/

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Multimodal electrophysiology, sleep neuroscience

Publications

PUBLICATIONS

- **Simultaneous stomach-brain electrophysiology reveals dynamic coupling in human sleep.** *bioRxiv : the preprint server for biology*
  Rao, A. A., Fredericks, M., Dresler, M., Rebollo, I., Zeitzer, J. M., Schoch, S. F., Coleman, T. P.
  2025
- **Dynamic Facial Analysis for Predicting Facial Palsy Outcomes: Comparing Landmark Detection Models and Integrating Ordinal Regression.** *Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Annual International Conference*
  Rao, A. A., Greene, J. J., Coleman, T. P.

2025; 2025: 1-7

- **Machine learning methods to track dynamic facial function in facial palsy.** *IEEE transactions on bio-medical engineering*
  Rao, A. A., Greene, J. J., Coleman, T. P.
  2025; PP

- **Dynamic facial analysis for predicting facial palsy outcomes: Comparing landmark detection models and integrating ordinal regression** *Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC)*
  Rao, A. A., Greene, J. J., Coleman, T. P.
  2025

- **An Integrated Optogenetic and Bioelectronic Platform for Regulating Cardiomyocyte Function.** *Advanced science (Weinheim, Baden-Wurttemberg, Germany)*
  Bolonduro, O. A., Chen, Z., Fucetola, C. P., Lai, Y., Cote, M., Kajola, R. O., Rao, A. A., Liu, H., Tzanakakis, E. S., Timko, B. P.
  2024: e2402236

- **Heart-on-a-Chip Model with Integrated Extra- and Intracellular Bioelectronics for Monitoring Cardiac Electrophysiology under Acute Hypoxia** *NANO LETTERS*
  Liu, H., Bolonduro, O. A., Hu, N., Ju, J., Rao, A. A., Duffy, B. M., Huang, Z., Black, L. D., Timko, B. P.
  2020; 20 (4): 2585-2593

- **From biomimicry to bioelectronics: Smart materials for cardiac tissue engineering** *NANO RESEARCH*
  Bolonduro, O. A., Duffy, B. M., Rao, A. A., Black, L. D., Timko, B. P.
  2020; 13 (5): 1253-1267