Noah Okada

Pasadena, CA — Google Scholar — LinkedIn

Education

California Institute of Technology — Ph.D., Social & Decision Neuroscience *Expected 2028*
Advisor: Dean Mobbs, Ph.D.

Emory University — B.S. Neuroscience (Summa Cum Laude); B.A. Computer Science (Chair's Award) *2023*
Advisor: Daniel Drane, Ph.D.

Research Experience

California Institute of Technology, Chen Neuroscience Institute *Sept 2023 – Present*
Graduate Research Fellow, Advisor: Dean Mobbs, Ph.D.

- Designed large-scale experiments comparing coordination and risky decision-making in 800 LLM agents against behavioral data from 764 humans; identified systematic differences in compromise, reciprocity, and responsibility attribution.
- Built a representation-engineering pipeline for Gemma-2-9B-IT that extracts emotion-related directions from residual-stream activations and constructs steering interventions to test their causal effects on threat-sensitive decisions.
- Designed and ran preregistered online behavioral studies with 700+ participants; developed computational models of decision-making under threat using hierarchical Bayesian inference and reinforcement learning.

Emory University School of Medicine *Jan 2020 – Dec 2023*
Research Assistant, Advisor: Daniel Drane, Ph.D.

- Led development of a multi-site cognitive assessment platform for epilepsy research
- Coordinated researchers, clinicians, and engineers across three sites and produced study protocols, data dictionaries, and reproducible research workflows.
- Developed an NLP based scoring method to identify deficits in memory from verbal recall responses.

Stanford University, Department of Neurology *May – Aug 2022*
Research Intern, Advisor: Josef Parvizi, M.D., Ph.D.

- Developed an immersive VR spatial-memory experiment for intracranial EEG research and analyzed multimodal neural and behavioral time-series data.

Massachusetts Institute of Technology, IMES *June 2021 – Jan 2022*
Research Intern, Advisor: Mercedes Balcells-Camps, Ph.D.

- Conducted a literature review synthesizing methods for monitoring cardiovascular disease and mental health, characterizing shared physiological signals and endpoints across clinical and wearable modalities.
- Evaluated multimodal and wearable sensing approaches for monitoring overlapping cardiovascular and mental health symptoms in real-world settings.

Technical Skills

Machine Learning & AI: Large language model inference and evaluation, activation steering, behavioral evaluations, multi-agent simulation, NLP, reinforcement learning

Statistics & Experimental Methods: Hierarchical Bayesian modeling, causal intervention experiments, human–AI behavioral comparisons
Programming: Python (PyTorch, Transformers, pandas, JAX, PyMC), JavaScript, C# (Unity), MATLAB, Firebase

Research Systems: VR experiments, eye tracking, EEG and physiological time-series analysis, Large-scale online behavioral experiments

Publications

1. **Okada, N.**, Garg, K., Deng, W., & Mobbs, D. (2026). Do LLM agents compromise like humans? Risk and responsibility in dyadic decision-making. *SocialAgent: Second Workshop on Large Language Models for Social Reasoning and Simulation, NeurIPS 2026* (accepted).
2. **Okada, N.**, McNeely-White, K. L., Cleary, A. M., Carlaw, B. N., Drane, D. L., Parsons, T. D., McMahan, T., Neisser, J., & Pedersen, N. P. (2023). A virtual reality paradigm with dynamic scene stimuli for use in memory research. *Behavior Research Methods*. **[Link]**
3. Drane, D. L., Hewitt, K. C., Price, M. E., Rush, B. K., Blackmon, K., **Okada, N.**, Shade, T., Valentin, E., Vinson, J., Rosen, P., & Loring, D. W. (2023). Case study of invalid to valid shift in cognitive performance following successful treatment of psychogenic nonepileptic seizure events. *Journal of Clinical and Experimental Neuropsychology*. **[Link]**
4. Castillon, I., Chartier, T., Venkatesha, V., **Okada, N.**, Davis, A., Cleary, A. M., & Blanchard, N. (2023). Automatically identifying the human sense of familiarity using eye gaze features. *International Conference on Human-Computer Interaction*. **[Link]**
5. Chen, S., **Okada, N.**, Zheng, Y., Bueno, H. C., Park, R., Frias, J., Peterson, B., Gonzalez, D., Perez-Haddock, Y., Tourgeman, I., & Balcells-Camps, M. (2022). Relationship between the methods of monitoring cardiovascular disease and mental health. *Neuromodulation*. **[Link]**
6. Cleary, A. M., Neisser, J., McMahan, T., Parsons, T. D., Alwaki, A., **Okada, N.**, Vosoughi, A., Kheder, A., Drane, D. L., & Pedersen, N. P. (2021). Subjective distinguishability of seizure and non-seizure déjà vu: A case report, brief literature review, and research prospects. *Epilepsy & Behavior*. **[Link]**

Selected Presentations

1. **Okada, N.**, Rajeh, Y., Skodje, T., Brady, E., Shade, T., Ravikanti, K., Adams, K., Pedersen, N. P., & Drane, D. L. (2023). A gamified framework for multimodal memory assessment in patients undergoing epilepsy surgery. *American Epilepsy Society Annual Meeting*. (Poster)
2. **Okada, N.**, White, K., Drane, D. L., Parsons, T., McMahan, T., Neisser, J., Pedersen, N., & Cleary, A. M. (2022). Modern immersive virtual reality paradigm to investigate familiarity and déjà vu. *Society for Neuroscience*, San Diego, CA. (Poster)
3. **Okada, N.**, Xu, L., & Mobbs, D. (2022). Investigating defensive fear systems in the face of threats. *Gulf Coast Undergraduate Research Conference*, Houston, TX. (Oral)

Honors & Awards

Hertz Fellowship Finalist (2024) • NSF Graduate Research Fellowship (2023) • Tianqiao & Chrissy Chen Institute Graduate Research Fellow (2023–2024) • Schmidt Futures Quad Fellow (2023–2024) • Barry M. Goldwater Scholar (2022–2023)

Leadership

Board of Directors, Caltech Student–Faculty Programs (SURF), *2025 – Present* • **Senior Fellow Ambassador**, Quad Fellowship Program, *2024 – Present* • **Residential Associate**, Blacker House, Caltech, *2024 – Present* • **Executive Board**, Emory Entrepreneurship & Venture Management, *2020 – 2023*