

Allison Morgan

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Summary


Human factors and UX researcher with 4+ years of experience conducting small- and large-scale human-subjects studies across lab, vehicle, and remote settings. Specializes in end-to-end data pipelines, including **IRB-compliant collection, multimodal instrumentation, (VR/AR, eye tracking, physiological sensors), mixed-methods analysis, and data management**. Skilled at standardizing protocols across teams and translating human-subjects data into design decisions, research outputs, and transferable technology.

Education

University of California, San Diego — *B.S. Cognitive & Behavioral Neuroscience*




La Jolla, CA • June 2021

Experience

Toyota Research Institute — UX Research Associate, [Human Interactive Driving](#) 

Jan 2022 – Present
Los Altos, CA

- Contributed to the design and development of AI-supported human-machine interfaces (HMIs).
- Designed and managed human-subjects studies using simulators and in-vehicle setups; captured driving behavior for model training and HMI validation.
- Built pipelines for scheduling, vendor coordination, and IRB workflows; surveyed 100+ participants across cross-functional studies.
- Created reusable protocols and technical documentation for driving related studies; established data governance and collection standards for cross-team reproducibility and scalability.
- Operated and maintained multimodal systems (biosensors, eye tracking, simulator I/O); ensured signal quality and synchronized behavioral data capture.
- Conducted interviews with users and stakeholders; synthesized findings into reports to inform HMI design and identify new research opportunities.
- Designed validated measures and surveys; performed mixed-methods analysis to assess user experience and HMI efficacy.

UC San Diego — Research Assistant ([Human-centered eXtended Intelligence \(HXI\)](#)  | [Comparative Cognition Lab](#)  | [Early Learning & Cognition Lab](#) )

May 2020 – Feb 2022
La Jolla, CA

- Designed study protocols and created stimuli (audio/visual); conducted in-person and remote experimental testing with child and adult participants.
- Managed data quality control and documentation across studies; consolidated datasets and archived study materials for cross-lab reuse.

Skills

Technical: Python, R, ROS, Linux, Git; qualitative coding tools (Dedoose, MAXQDA, Atlas.ti); Jupyter, Excel, Visual Studio Code

Research Methods: Empirical experimentation, usability testing, interviews, ethnographic research, A/B testing, surveys; statistical analysis, mixed-methods, behavioral logging, time-synced data capture

Multimodal Instrumentation: VR/AR, driving simulators, **eye tracking** (Tobii, SmartEye), **physiological sensors** (Empatica, EmotiBit, Shimmer), survey platforms (Qualtrics)

Publications & Patents

Publications

- [1] Costa, J., **Morgan, A.**, Yasuda, H., Sumner, E., Gopinath, D., Chau, S., Nguyen, H., Best, A., Rosman, G., & Chen, T. (2025). "From Dashboards to Dialogue: Evaluating a Conversational AI Coach for Performance Driving Skill Development." In *Proceedings of the 17th International Conference on Automotive User Interfaces and Interactive Vehicular Applications (AutomotiveUI '25)*, accepted for publication.
- [2] Gopinath, D., Cui, X., DeCastro, J., Sumner, E., Costa, J., Yasuda, H., **Morgan, A.**, Dees, L., Chau, S., Leonard, J., et al. (2025). "Computational teaching for driving via multi-task imitation learning." In *2025 IEEE International Conference on Robotics and Automation (ICRA)*, 7019–7027. IEEE.
- [3] Dallas, J., **Morgan, A.**, Yasuda, H., Thompson, M., Chen, T., & Subosits, J. (2025). "Task Decomposition for Learning Advanced Driving Skills." In *Proceedings of the 2025 American Control Conference (ACC)*, 4023–4030. IEEE.
- [4] Schrum, M., **Morgan, A.**, Gopinath, D., Costa, J., Sumner, E., Rosman, G., & Chen, T. (2025). "A Data-Driven Framework for Skill Representation." Accepted to the *LEAP-HRI Workshop at the ACM/IEEE International Conference on Human-Robot Interaction (HRI '25)*.
- [5] Sumner, E. S., DeCastro, J., Costa, J., Gopinath, D. E., Kimani, E., Hakimi, S., **Morgan, A.**, Best, A., Nguyen, H., Brooks, D. J., et al. (2024). "Personalizing driver safety interfaces via driver cognitive factors inference." *Scientific Reports*, 14(1), 18058.
- [6] Yasuda, H., Thompson, M., Rios Lazcano, A. M., **Morgan, A.**, Dallas, J., Lee, J., Chen, T. L., Subosits, J., & Nimura, K. (2024). "Gliding on simulated ice: Effect of low- μ emulation on drift training." In *Proceedings of the 16th International Conference on Automotive User Interfaces and Interactive Vehicular Applications (AutomotiveUI '24)*, 23–31.
- [7] Gopinath, D., DeCastro, J., Rosman, G., Sumner, E., **Morgan, A.**, Hakimi, S., & Stent, S. (2022). "HMIway-env: A framework for simulating behaviors and preferences to support human-AI teaming in driving." In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 4342–4350.

Patents

- [P1] dos Reis Costa, J. M., Chen, T. L., Sumner, E. S., **Morgan, A.**, et al. (2024). *Augmented reality interfaces for speed regulation through optical illusions*. US Patent App. 18/182,987. Published 2024-09-19.
- [P2] DeCastro, J., Rosman, G., Stent, S. A. I., Sumner, E., Hakimi, S., Gopinath, D. E., **Morgan, A.** (2023). *System and method for training at least one policy using a framework for encoding human behaviors and preferences in a driving environment*. US Patent App. 18/098,776. Published 2023-10-19.