



ECENTRIC COG

Trey Roady, PhD CHFP

Human Factors Engineer
UX Researcher
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[0000-0002-0945-1321](https://orcid.org/0000-0002-0945-1321)

Skills

UX

Usability Testing, Personas, Heuristic Walkthrough, Task Analysis, Wireframes, Change Management, Surveys, UserInterviews.com, Multimodal (Haptic + Audio), Context. Inquiry, Job Analysis

Human Factors

Info Processing, Artificial Intelligence, Anthropometry, Biomechanics, Validation, Affective Cog, Cog Workload, Eng. Management, Experimental Design, Sociotechnical Systems

Data Science:

R (tidyverse), C/C++, Python, VBA, Data Viz (ggplot), GL Mixed Models, Time Series, ANOVA, Ops Research, Bayesian Models, PCA, Quality Control

Professional:

Public Speaking, Technical Writing, Mentorship, Recruiting, Video / Audio Editing

Summary

I'm a mixed-methods systems researcher who designs reliable, human-centered experiences. (Mostly, I explain people to engineers.)

I'm looking for remote research and development roles with a focus on positive impact and a chance to build an effective team. I thrive on varied work that requires an adaptable approach. My experience is primarily in driving automation, human-AI interaction, aviation, AR interfaces, and industrial safety but am keen to cross-apply lessons.

Education

PhD: Interdisciplinary Engineering, Texas A&M;

Focus: Human Factors & Cognitive Systems

BS: Industrial & Systems Engineering, Texas A&M; **Minor:** Psychology

Professional Experience

Senior Behavioral Scientist (UX), ChaiOne Sept. 2022 - Present

- Onsite context. inquiry in nuclear power reduced knowledge loss and sped onboarding.
- Remote usability testing, recruiting, & surveying for corporate Gen AI, EV infrastructure, and a national customer experience consolidation of four different service lines into one platform.

Senior Research Scientist II (HF), Seeing Machines Oct. 2018 - Aug. 2022

- ¹Developed the first industry-wide regulatory protocol for driver monitoring evaluation.
- Spear-headed a repeatable analysis connecting data insights to missed opportunities for existing clients. Increased revenue \$2 million (AUD) in its first iteration.
- Human-in-the-loop AI supervision architecture and multimodal interaction design of 3rd gen. Guardian hardware to provide auditable public safety in fleet trucking.
- Contributed to long-term innovation strategy and product roadmap.

Post-Doctoral Researcher, ACE Lab May - Aug. 2018

- Lab manager for mixed methods research in telehealth, PTSD, & procedures.
- Project manager for investigation of medical interfaces & burnout in nursing via design of a full-shift gaze tracking study.

Research Assistant, HF&CS Lab, .5 FTE May 2014 - May 2018

- Supported FAA technology standards to support cognitive workload & wearables
- Developed systems-oriented mobile medical device design framework, SEIPS-m, to identify common socio-technical failure modes.

Lead Teaching Assistant, College of Engineering, .5 FTE Aug. 2012 - May 2018

- Primary technical instructor for 26 Senior Design groups in industry consultation. Clients included Fortune 500, NASA, Houston Foodbank, and major hospital systems (2 sem.)

Technician II, Human Factors & Cognitive Systems Lab, .5 FTE Oct. 2011 - Aug. 2012

- Full-stack research for 5 user studies regarding novel AR displays under stress.

Student Tech. II, College of Architecture July 2010 - May 2012

- Scripted controls for 200 lab computers; Remote and in-person IT support & repair

Honors

²Best Paper: Road User Measurement Transportation Research Board Jan. 2023

Outstanding Student Member: Texas A&M HFES Apr. 2017

Winner & Best Presentation: UX Guerilla Design Challenge, HFES Sept. 2016

Student Observer: HFES Executive Council Meeting Apr. 2015

³Best Student Paper: HFES Perception & Performance TG Oct. 2013



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Organizations

UX in ATX, Panel Organizer	2023
Human Factors and Ergonomics Society, Associate Member, Reviewer	2018-Present
Student Member	2011 - 2018
Houston Chapter, Student Member	2013 - 2018
Texas A&M University Chapter, President	2014 - 2016
<ul style="list-style-type: none">Founded chapter, which received Silver award status first two years; now Gold	

Cepheid Variable, Member 2007 - Present

Head Security Officer, AggieCon 47 Mar. 2016

- Recruited, trained, and supervised 15 security workers for 500 guest, 3 day convention
- Commended by attendees for professionalism and customer service of volunteer staff

Student Development Officer 2011 - 2012

- Record breaking recruitment and retention numbers
- Managed formal mentorship program for 30 students

Student Mentor 2010 - 2016

Certifications

Board Certification in Professional Ergonomics,

Certified Human Factors Professional 2020 - Present

Associate Human Factors Professional 2016 - 2020

Publications (ORCID: [0000-0002-0945-1321](https://orcid.org/0000-0002-0945-1321))

Book Chapters

- ¹Lenné, M. G., Roady, T., & Kuo, J. (2020). Driver State Monitoring for Decreased Fitness to Drive. In Regan, M.A., Fisher, D.L., Horrey, W.J., & Lee, J.D. (Eds.), *Handbook of Human Factors for Automated, Connected, and Intelligent Vehicles*. (1st ed.). CRC Press. <https://doi.org/10.1201/b21974>

Journal Articles

- Yang, S., Wilson, K., Roady, T., Kuo, J, and Lenne, M. (2022) Beyond gaze fixation: Modeling peripheral vision in relation to speed, partial automation, cognitive load, and age in high-way driving. *Accident Analysis and Prevention*.
- Yang, S., Wilson, K. M., Roady, T., Kuo, J., & Lenné, M. G. (2020). Evaluating Driver Features for Cognitive Distraction Detection and Validation in Manual and Level 2 Automated Driving. *Human Factors*. [10.1177/0018720820964149](https://doi.org/10.1177/0018720820964149)
- Wilson, K. M., Yang, S., Roady, T., Kuo, J., & Lenné, M. G. (2020). Driver trust & mode confusion in an on-road study of level-2 automated vehicle technology. *Safety Science*, 130, 104845.
- Tippey, K., Roady, T., Rodriguez-Paras, C., Ferris, T.K., Brown, L., and Rantz, W. (2017). General Aviation Weather Alerting: The Effectiveness of Different Visual and Tactile Display Characteristics in Supporting Weather-Related Decision-Making . *International Journal of Aerospace Psychology*. [10.1080/24721840.2018.1443271](https://doi.org/10.1080/24721840.2018.1443271)



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Publications

Theses

1. **Roady III, W. A.** (2018). *Design and Validation of Vibrotactile Communications for Dynamic Environments* [Doctoral dissertation, Texas A & M University].
2. **Roady, T.** (2012) *An analysis of static, dynamic, and apparent motion vibrotactile stimuli.* [Undergraduate research thesis, Texas A&M University].

Peer-Reviewed Conference Proceedings

1. ²Yang, S., Wilson, K., **Roady, T.**, Kuo, J. & Lenné, M. G. (2023). Analyzing the Spotlight of Attention in Connection with Real-World Highway Environments. Transportation Research Board Annual Meeting, Washington, DC
2. Yang, S., Shiferaw, B., **Roady, T.**, Kuo, J., & Lenné, M. G. (2021). Gaze Shifting Like A Lizard in Driver Cell Phone Distraction. Proceedings of the Human Factors and Ergonomics Society 65th Annual Meeting, Baltimore, MA
3. **Roady, T.**, Wilson, K., Kuo, J., & Lenné, M. G. (2020). How Do Drivers Hold Their Phone? Age, Prevalence, & Handedness. Proceedings of the Human Factors and Ergonomics Society 59th Annual Meeting, *Virtual*, 64(1), 1254–1257. <https://doi.org/10.1177/1071181320641298>
4. Johnson, I., Whitehurst, G., Risukhin, V. N., Brown, L. J., Rantz, W., Ferris, T. K., **Roady, T.**, Rodriguez-Paras, C., Tippey, K., & Futrell, M. J. (2017). PEGASAS: Weather Technology in the Cockpit. *19th International Symposium on Aviation Psychology*, 323-328.
5. Dinakar, S., Tippey, K., **Roady, T.**, Edery, J., and Ferris, T.K. (2016). Using modern social network techniques to expand link analysis in a nuclear reactor console redesign. Proceedings of the Human Factors and Ergonomics Society 60th Annual Meeting. Washington, DC. September.
6. **Roady, T.** and Ferris, T.K. (2014). Supporting speeded navigational communication via gesture-controlled vibrotactile displays. Proceedings of the Human Factors and Ergonomics Society 58th Annual Meeting. Chicago, IL. October.
7. Tippey, K. G., Sivaraj, E., Ardoin, W., **Roady, T.**, and Ferris, T.K. (2014). Texting while driving using Google Glass: investigating the combined effects of heads-up display and hands-free input on driving safety and performance. Proceedings of the Human Factors and Ergonomics Society 58th Annual Meeting. Chicago, IL. October.
8. ³**Roady, T.** and Ferris, T.K. (2013). Supporting speeded navigational communication via gesture-controlled vibrotactile displays. Proceedings of the Human Factors and Ergonomics Society 57th Annual Meeting. San Diego, CA. October.
9. **Roady, T.**, & Ferris, T. K. (2012). An Analysis of Static, Dynamic, and Saltatory Vibrotactile Stimuli to Inform the Design of Efficient Haptic Communication Systems. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 56, No. 1, pp. 2075-2079). SAGE Publications.

Invited Talks

1. AI Panel Discussion (Sept 2023). Panelist. Business Analyst Development Day
2. UX Frontiers: Artificial Intelligence in Design. (June 2023) Panelist. UX in ATX Conference
3. Human Factors Futures (April 2023). Panelist. Houston HFES One-Day Symposium
4. Validation of Human/AI Systems. (Dec 2019). AI Futures Lecture Series. Australian Office of National Intelligence.
5. Surviving Graduate School by Protecting Your Time. (July, 2018). Louis Stokes Alliance for Minority Participation (LSAMP). Focus on time management strategies for neurodiverse graduate students.