Shuyuan (Dario) Liu

Google Scholar

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LinkedIn

UX Researcher | Mixed-Methods Research | Human-AI Interaction | Accessibility

Education

Ph.D | HCC, **Georgia Tech** — Aug, 2024-Presen,Atlanta, GA
- **Advisors:** Alex Adams &Thad Starner

M.S. | Human Computer Interaction, **University of Maryland, College Park** — Aug 2022-2024,College, MD
- **Advisor: Jun Nishida**

B.A. | Psychology, **York University** — Sep 2016- Jun 2020, Toronto ,ON

Experience

Georgia Institute of Technology — Graduate Researcher — **Aug 2024–Present, GA**

Human-AI Interaction, Affective Computing & Accessibility

- Designed a within-subject driving-simulator study with 25 licensed drivers to evaluate when adaptive breathing guidance should intervene; combined physiological, behavioral, self-report, and interview data.
- Analyzed synchronized ECG, PPG/BVP, respiration, and driving telemetry with Python, R, and mixed-effects models; findings supported preemptive intervention as a design direction.
- Built event-triggered airflow and haptic systems with NADS miniSim and Arduino to support controlled studies.
- Designed and evaluated LLM-generated descriptions of complex CS visuals for blind and low-vision learners; synthesized experiments and interviews into accessibility recommendations.

Product Development Intern - Gen G — **Dec, 2023-Feb, 2024, Shanghai**
- **Research:** Research the potential strategies to assist e-sport player to increase stress resilience, manage stress and therefore optimize in-time performance.
- **Design Solutions:** Design the solution to help e-sport players to manage in-time stress by using the frontline research result to modulate physiological change through receiving haptics intervention.
- **Competitive Analysis:** Research current products dedicating to apply AI-voice coach into e-sport game training and find opportunities and insights for unique selling point

UX Researcher - Xavor Corporation — **Apr, 2021-Dec, 2021, Shanghai**
- **Insight Gathering:** Led over 20 in-depth interviews with senior users and stakeholders, culminating in an exhaustive insights report that steered design choices.
- **Collaboration & Ideation:** Orchestrated feature ideation workshops with cross-functional teams, aligning over 20 professionals on product vision. Held regular workshops to synthesize user data, fostering collective brainstorming and facilitating feature conception.
- **Design & Validation:** Devised intuitive human-robot interaction scenarios and wireframes, infusing psychological insights into chatbot user interfaces and personalities. These designs were authenticated through task-oriented user testing, achieving a commendable 90% task completion rate among 10+ senior participants.

Publications

Liu, S., Zhao, Y., Song, K., Gao, Y., Kim, M., & Adams, A. T. (2026). Before demand peaks: Event-relative onset timing of implicit airflow guidance in driving. Manuscript under review at the ACM CHI Conference on Human Factors in Computing Systems (CHI '27).

Premkumar, P.*, **Liu, S.***, Clark, R., Shibata, K., Casarez, C. V., & Walker, B. N. (2026). LLMs with a heart: Using contextual heartbeat haptics to add feeling to text and audio LLM interactions. In Proceedings of the 2026 International Conference on Multimodal Interaction Companion (ICMI Companion '26). Association for Computing Machinery.

Premkumar, P., **Liu, S.**, Clark, R., & Walker, B. N. (2026). HeartSong: Beat-synchronized haptic feedback for music listening and social presence. Manuscript under review for an IEEE conference.

Liu, S., Premkumar, P., Nahodyl, D., Zhao, Y., & Starner, T. (2026, June). ECHO: Educational Chatter Help and Overview-Just-In-Time Assistance and Retrospective Viewing for Teaching Assistants on Online Education Forums (WiP). In Proceedings of the Thirteenth ACM Conference on Learning@ Scale (pp. 453-457).

Lueder, R., Zhao, Y., Gray, M., **Liu, S.**, Chatterjee, S., Zhang, Q., ... & Starner, T. (2026, June). Nosi IDE: Securing Coding Assessment Integrity in the Age of LLMs via Process-Driven Analytics. In Proceedings of the Thirteenth ACM Conference on Learning@ Scale (pp. 463-467).

Kima, M. S., **Liub, S.**, Pérez-Guzmánc, S., Lib, M., & Encarnaciónd, T. Autonomous Trucking Technology, Existence Acceptance, and Regulatory Preferences of Road Users: A Driving Simulation Approach.

Skills

Statistical & Computational Analysis (Multilevel Modeling, Linear Modeling, Semi-Structural Equation Modeling (SEM) in R Studio | Structural Topic Modeling (STM), Natural Language Processing (NLP)

Physiological Signal Processing (Biosignal Analysis: Heart Rate (HR), Heart Rate Variability (HRV), Breathing Rate (BR) | Sensor Synchronization and Preprocessing: ECG, BVP, EDA, Respiration Belt | Toolkits: Python (NeuroKit2, SciPy, pandas), MATLAB, pyxdf

Human-Computer Interaction & Prototyping (Driving Simulator: NADS miniSim (scenario scripting, event-triggered intervention) | Hardware Prototyping: Arduino (Adafruit FeatherWing, PWM control for airflow/haptic feedback) | Web & UI Design: Figma (low-/high-fidelity prototypes)