CARRIE LAU

PhD Title: Designing and Evaluating Gen-AI for Cultural Resilience

Applied HCI Researcher specializing in the design, evaluation, and iteration of Gen-AI and intelligent systems. I leverage my expertise in mixed-methods research (including eye-tracking and usability studies) to measure complex user journeys and sentiment towards AI-assisted features. Proven success collaborating with Product and Engineering teams, transforming technical insights into impactful product features.

Skills

UX Research & Methodology

- Mixed-Methods Design (Generative & Evaluative), Usability Studies, Interviews, Surveys, Contextual Inquiry
- Multimodal Techniques: Eye-Tracking, Head-Tracking, Verbal Interaction
- Qualitative and Quantitative Research

AI & Data Analytics

- Natural Language Processing (NLP) Concepts
- Statistical Analysis & Data Visualization: Python (R, SQL, Data Mining), Logs Analysis

Product & Execution

- Project Management: Scrum Master (PSM I), Agile/Scrum Methodologies
- Product Mindset: Start-ups & Growth Hacking

Tools & Other

- Design Tools (Adobe Suite, Prototyping)

Accreditation

- Certified Professional Scrum Master (PSM I)
- PADI Advanced Open Water Diver

Scholarship

- 2014-2015 | Outstanding HKSAR Government Reaching Out
- 2014-2015 | HKSAR Matching Scholarships Scheme
- 2014-2015 | HKSAR Self-financing Post-secondary Scholarship Scheme

Languages

- Cantonese (Native)
- Mandarin
- English
- German (B2)

Human-Computer Interaction, LLMs, XR

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Portfolio: https://www.carrielau.com/

Professional experience

Scientific Researcher (PhD) Mar 2023 - Current

Technical University of Munich (Germany)

- Designed and evaluated adaptive XR prototypes to inform design guidelines for Gen-AI assistance related to user expectations and mental models for guided content creation. Collaborated with cross-disciplinary teams, translating findings into actionable design principles.
- Built Python pipelines for data analysis; utilized Multimodal Data Fusion and interaction logs to measure engagement metrics and user behavior in AI-driven systems.
- Measured and tracked user sentiment towards the usability and emotional resonance of LLM-powered narratives, informing evidence-based design decisions.

Master Thesis Feb 2022 - Sep 2022

Volkswagen AG, Wolfsburg (Germany)

- Designed and executed a user study to identify critical use cases and derive an HCI approach for increasing long-haul occupant comfort in autonomous vehicles.

Product Management Internship Mar 2021 - Aug 2021

Robert Bosch GmbH, Abstatt (Germany)

- Conducted competitive and market analyses to understand user expectations for vehicle safety systems.
- Identified product opportunities through user needs research and technology scouting.
- Collaborated with engineers and product manager to align safety feature development with user requirements.

Co-Founder & Product Lead Apr 2019 - Apr 2021

FoodWalker (Hong Kong)

- Drove product vision and led UX design for a B2B marketplace, scaling revenue to $780k (225% growth) and expanding the customer base to over 500 clients.

Product Manager Sep 2017 - Aug 2019

MyiCellar (Hong Kong)

- Led user research and product development for a mobile app, optimizing the content and discovery experience for a large user base.
- Coordinated cross-functional teams to implement user-centered interface improvements., to avoid information overload.
- Conducted usability evaluations and gathered user feedback to define and optimize critical user journeys and experience sentiment within the e-commerce platform.
- Delivered design strategies in collaboration with partners (e.g., Moët Hennessy, LVMH) for new retail campaigns.

Education

Master of Science, Human Computer Interaction, Grade: 1,2 (Very good) Sep 2019 - Nov 2022

University of Siegen

Project with Bosch in the area of human-machine interface - Implicit nudging for careless driving behavior in autonomous vehicles SAE Level 4, 5

Information Technology and Electrical Engineering (Erasmus), Grade: 1.0 (Very good) Sep 2021 - Dec 2021

University of Oulu, (Finnland)

Courses completed during my Erasmus mobility exchange:

- Natural Language Processing and Text Mining (NLTK, spaCy), VR Systems and People, Introduction to Data Mining (R, Matlab, SQL), Introduction to Deep Learning and Multimodal Data Fusion (Numpy, Pytorch, Python)

Key Publications

Lau, K. H. C., Bozkir, E., Gao, H., & Kasneci, E. (2024). Evaluating usability and engagement of large language models in virtual reality for traditional Scottish curling. In Proceedings of the 1st International Workshop on Artificial Intelligence for Digital Heritage (AI4DH 2024), held in conjunction with the European Conference on Computer Vision (ECCV 2024). Springer. https://doi.org/10.1007/978-3-031-91572-7_11

- [**Impact**]: One of the first studies to evaluate LLMs in VR cultural learning contexts. Using engagement metrics and interaction log data in VR to assess the usability and emotional resonance of LLM-powered narratives in a niche cultural domain.

Lau, K. H. C., Yun, B., Saruba, S., Bozkir, E., & Kasneci, E. (2025). Wrapped in Anansi's web: Unweaving the impacts of generative-AI personalization and VR immersion in oral storytelling. In Proceedings of the 15th Augmented Humans International Conference (AHs '25). Association for Computing Machinery. https://doi.org/10.1145/3745900.3746103

- [**Impact**]: Investigates how generative AI personalization affects user engagement and cultural-identity perception in VR-based storytelling. Highlights trade-offs between cultural familiarity, immersion, and agency using mixed-methods evaluation (self-reported data and semi-structure interview).

Lau, K. H. C., Sen, S., Stark, P., Bozkir, E., & Kasneci, E. (2025). Adaptive Gen-AI guidance in virtual reality: A multimodal exploration of engagement in Neapolitan pizza-making. In Proceedings of the 27th International Conference on Multimodal Interaction (ICMI '25) (pp. 305–316). Association for Computing Machinery. https://doi.org/10.1145/3716553.3750760

- [**Impact**]: Demonstrating that moderate adaptiveness in AI-led VR can improve users' visual scanning and attention. Invited to present these findings at UNESCO's Zugang Gestalten! conference on accessing cultural heritage. (eyetracking, head movement and questionnaire)

Lau, K. H. C. (2025). Designing and evaluating Gen-AI for cultural resilience (Doctoral Consortium). In Proceedings of the 27th International Conference on Multimodal Interaction (ICMI '25) (pp. 706–710). Association for Computing Machinery. https://doi.org/10.1145/3716553.3750819

Lau, K. H. C., Stark, P., Bozkir, E., & Kasneci, E. (2025). Skin-Deep Bias: How Avatar Appearances Shape Perceptions of AI Hiring *[under review]*

- [**Impact**]: Developed a scalable methodology combining **webcam-based eye-tracking** with **crowdsourced experiments** to study how real-time GenAI avatar cues shape fairness perceptions in AI hiring, advancing both HCI methods and understanding of bias in socio-technical systems.

Lau, K. H. C.*, Terzimehić., N.*, & Kasneci, E. (2025). PromptMirror: Visualizing ChatGPT Use to Support Student Reflection *[under review]*

- [**Impact**]: PromptMirror, a personal analytics dashboard that visualizes students' ChatGPT use to foster reflection and critical engagement with AI, contributing design insights for educational technologies in higher education.