KEXIN QUAN

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RESEARCH INTEREST

My research develops brain-inspired, affective, and agentic AI systems that augment human sensemaking and agency. I design socially intelligent, multi-agent systems that model cognition and emotion as distributed, interactive processes, enabling adaptive decision-making, reflective reasoning, and emotionally grounded human-AI collaboration in complex, information-rich environments.

EDUCATION

Ph.D. in progress, Information Sciences University of Illinois, Urbana-Champaign 2023-2028
Supervised by Prof. Jessie Chin

M.S. Electrical & Computer Eng University of California, San Diego 2021-2023
Machine Learning and Data Science

B.S. Cognitive Science University of California, San Diego 2017-2021
Specialization in Machine Learning & Neural Computation

PUBLICATIONS

[1] **K. Quan**, D. Albassam[†], M. Wu[†], Z. Ding, J. Chin. Towards AI as Colleagues: Multi-Agent System Improves Structured Ideation Processes. *In Proceedings of the 2026 CHI Conference on Human Factors in Computing Systems (CHI '26). (Accepted)*

[2] **K. Quan**, J. Chin. Conversational Decision Support for Information Search Under Uncertainty: Effects of Gist and Verbatim Feedback. *International Journal of Human-Computer Studies (Under Review), 2026*

[3] M. Wu, **K. Quan**, W. Liu, M. Yao, J. Chin. "Pragmatic Tools or Empowering Friends?" Discovering and Co-Designing Personality-Aligned AI Writing Companions. *In Proceedings of the 2026 Conference Creativity and Cognition (C&C'26), London, UK. (In Submission)*

[4] M. Bak, **K. Quan**, T. Tomaszewski, J. Chin. Can Conversational AI Counsel for Change? A Theory-Driven Approach to Supporting Dietary Intentions in Ambivalent Individuals. *arXiv preprint arXiv:2511.02428 (2025).*

[5] **K. Quan**, P. Ramakrishnan, J. Chin. Can AI Take a Joke—Or Make One? A Study of Humor Generation and Recognition in LLMs. *In Adjunct Proceedings of the 2025 Conference on Creativity and Cognition (C&C'25), Online, 2025.*

[6] M. Wu, **K. Quan**, W. Liu, M. Yao, J. Chin. Incorporating Personality into AI Writing Companions: Mapping the Design Space. *In Adjunct Proceedings of the CHI Conference on Human Factors in Computing Systems Extended Abstracts (CHI EA '25). ACM. Late-Breaking Work.*

[7] Z. Huang, **K. Quan,** J. Chan, S. MacNeil. CausalMapper: Challenging designers to think in systems with Causal Maps and Large Language Model. *In Adjunct Proceedings of the 15th Conference on Creativity and Cognition (C&C'23), Online, 2023.*

[8] Q. Yang, Y. Hao[†], **K. Quan**[†], S. Yang[†], Y. Zhao[†], V. Kuleshov, F. Wang. 2023. Harnessing Biomedical Literature to Calibrate Clinicians' Trust in AI Decision Support Systems. *In Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI'23).*

[9] S. MacNeil, Z. Ding, **K. Quan,** T. J. Parashos, Y. Sun, S. P. Dow. Creative Work: Helping Novices Frame Better Problems through Interactive Scaffolding. *In Proceedings of the 13th Conference on Creativity and Cognition (C&C'21), Online, 2021.*

[10] S. MacNeil, Z. Ding, **K. Quan,** Z. Huang, K. Chen, S. P. Dow. ProbMap: Automatically Constructing Design Galleries through Feature Extraction and Semantic Clustering. *In Adjunct Proceedings*

[0†] Co-second authors with equal contribution.

of the 2021 Annual ACM Symposium on User Interface Software and Technology (UIST'21 Demo), Online, 2021.

Research Experience

Research Assistant, Funded by NIDILRR — Sep 2024–present
Supervised by Prof. Chung-yi Chiu, ChengXiang Zhai, and Jessie Chin

- Led the design and implementation of an agentic, multi-agent conversational framework grounded in cognitive architectures (ACT-R) to support adaptive health behavior change. Developed real-time, context-aware prototypes that orchestrate specialized agents for user modeling, dialogue planning, feedback generation, integrating generative AI to enhance self-efficacy and sustained engagement.
- Designed personalized multi-agent dialogue strategies informed by motivational theory and behavior change models. Built empathetic, multi-voiced conversational agents that dynamically coordinate communication style, intervention timing, and feedback based on users' behavioral states and interaction signals, validated through human-subject studies.

Research Assistant, UIUC ACTION Lab — July 2023–present
Supervised by Prof. Jessie Chin

- Currently developing Mental Worlds, a brain-inspired generative architecture that models inner–outer world coupling to operationalize emotion as an internal regulatory process and examine how structured affective dynamics support reflective reasoning and emotionally grounded HAI collaboration.
- Investigate how humans and AI agents jointly construct, distribute, and regulate cognition across ideation and decision processes, focusing on how feedback, representation, and social framing shape adaptive reasoning and shared understanding.
- Led SERA, a self-regulatory decision-making assistant grounded in Fuzzy-Trace Theory that examines how gist- and verbatim-based AI feedback influence users' information sampling and confidence [2], and MultiColleagues, a multi-agent ideation platform that leverages role-based AI collaboration to study distributed creativity and collective sense-making [1].

Research Assistant, Temple HCI Lab — Mar 2022–Sep 2023
Supervised by Prof. Stephen MacNeil

- Investigated how designers construct and navigate conceptual representations to support systems thinking and creative problem-solving across complex design contexts.
- Designed and evaluated *CausalMapper*, an LLM-enhanced web-based creativity support tool that scaffolds causal reasoning and exploration, leading to a C&C '23 Demo paper [7].

Visiting Research Intern, Cornell DesignAI Group — Mar 2022–Sep 2022
Supervised by Prof. Qian Yang

- Developed a clinical decision-support tool that integrates biomedical literature with AI-recommended treatments based on patient symptoms, aiming to calibrate clinicians' trust in AI suggestions.
- Conducted iterative prototyping and evaluated designs through clinician interviews, contributing the findings to a CHI '23 full paper as a co-second author [8].

Research Assistant, UCSD Design Lab — Apr 2020–Aug 2021
Supervised by Prof. Steven Dow and Prof. Stephen MacNeil

- Developed a real-time data pipeline to construct a network map in ConceptNet by decomposing and connecting ~300 users' unstructured problems based on shared key features using NLP tool-kits.
- Created creativity-support systems with computation models that automatically clustered and visualized user-generated problems to scaffold design novices as they worked on creative tasks, advanced understanding of design guidance mechanisms and resulted in C&C'21 [9] and UIST'21 [10] papers.

Visiting Research Assistant, Tsinghua University, The Future Lab — July–Oct 2019
Supervised by Prof. Yingqing Xu

- Designed and evaluated emotion-sensitive virtual agents, conducting semi-structured interviews with 30 participants and mixed-method analysis of affective and behavioral responses, contributing to a CHI EA'21 publication.

- Collected, processed, and visualized multimodal user data from ∼80 participants in Python using wearable and instrumented devices, including physiological signals (e.g., heart rate, blood pressure) and behavioral interaction signals (e.g., mouse-click pressure), to quantify emotion-related patterns for adaptive, real-time interaction.

Professional Experience

Data Analyst Intern, AXOS Bank, San Diego, CA — May–Aug 2021

- Designed and deployed a real-time interactive dashboard utilizing SQL, Excel, and Python for the comprehensive monitoring of consumer deposit metrics.
- Created insightful reports and executed strategic plans that significantly reduced the incidence of overdrafting among 60% of business banking customers.
- Implemented efficiency-enhancing measures that reduced the manual review workload by 5.7% and contributed to a $23,000 increase in annual revenue.

Skills

Programming Languages: Python, R, Javascript, LaTeX, MATLAB, SQL, Java
Machine Learning&NLP: pyTorch, TensorFlow, scikitlearn, NLTK, OpenAI, pandas, spaCy, TextBlob
Visualization Tools: Matplotlib, Seaborn, ggplot2, Plotly, Tableau, Excel
Fullstack: Git, React.js, Flask, HTML, CSS, Firebase, Figma, Miro, Heroku

Mentorship

Mentored Students — 2024-present

- Qinshi Zhang: Master student, Computer Science (UCSD)
- Jiaye Yong: Undergraduate student, Computer Science (UIUC)
- Rachel Cheung: Undergraduate student, ISchool (UIUC)
- Pavithra Ramakrishnan: Undergraduate student, ISchool (UIUC)

Teaching Experience

Teaching Assistant, UIUC — 2024

- IS504: Sociotechnical Information Systems (class size: 100)

Undergrad Teaching Assistant, UCSD — 2020–2021

- COGS189: Brain Computer Interfaces (class size: 50)
- COGS14A: Introduction to Research Methods (class size: 50)

Academic Service

Program Committee Member
ACM Creativity & Cognition (C&C), Publication Chair — 2026

Reviewer (15+ papers)
ACM Creativity & Cognition (C&C) — 2025, 2026
ACM CHI Full Paper, Poster — 2024, 2025, 2026

San Diego Design Workshop (SDDW), Organizer — 2021

Design for San Diego (D4SD) Community Design Jam, Coordinator — 2020