Ruijia (Hannah) Guan

Email: rjguan@stanford.edu Website: https://hannahguan.github.io/

Education

Stanford University **Stanford, CA**
MS, Symbolic Systems June 2027
University of Michigan **Ann Arbor, MI**
BS, Cognitive Science & Computer Science May 2025
Honor thesis in Cognitive Science: Structuring Strategic and Proactive AI Agents for Collective Deliberation [Paper]

Peer-Reviewed Publication

- Ashkinaze, J., **Guan, R.**, Adar, E., Budak, C., & Gilbert, E. Seeing like an AI: How LLMs apply (and misapply) Wikipedia neutrality norms. *2026 International AAAI Conference on Web and Social Media (ICWSM).* [Paper]
- **Guan, R.**, Lee-Robbins, E., Wang, X., & Adar, E. VisQuestions: Constructing Evaluations for Communicative Visualizations. *2025 ACM Conference on Human Factors in Computing Systems, Extended Abstracts (CHI EA).* [Paper]
- Esterwood, C., **Guan, R.**, Ye, X., & Robert, L. P. Virtually the same or realistically different: Do real-world robots differ from their virtual representations? *2025 ACM/IEEE International Conference on Human-Robot Interaction (HRI)*. [Paper]
- Johnson, J., Peralta, M., Kaur, M., Huang, R. S., Sheng, Z., **Guan, R.**, Rajaram, S., & Nebeling, M. Exploring MR-enhanced collaborative AI: Eliciting team perceptions and design considerations for the future of work. *2025 ACM SIGCHI Conference on Computer-Supported Cooperative Work & Social Computing (CSCW), October cycle*. [Paper]
- Huffman, D., & **Guan, R.** Computational models suggest that human memory judgments exhibit interference due to the use of overlapping representations. *Psychological Review*. [Paper]

Teaching and Working Experience

Meituan **Beijing, China**
AI Product Manager Intern May 2025 – August 2025
Background: Contributed to "Yaya," a B2C conversational AI agent that garnered 7,000+ DAU in the current small-scale beta release

- **Knowledge Engineering:** Built comprehensive knowledge bases and NLP-powered disambiguation system to address duplicate venue identification across China's county-level cities and transportation hubs, reducing query ambiguity by ~40% while optimizing AI reasoning visualization to improve user engagement and system transparency.
- **Product Strategy:** Drove product development by authoring 3 PRDs for unsupported service handling, flight booking, and incomplete query guidance, collaborating with engineering and design teams through Agile sprints and leveraging competitive analysis and SQL-based insights to enhance query intent classification routing across 11 technical modules.
- **Data Analytics & Platform Development:** Established data-driven prioritization by analyzing query patterns and failure cases to identify user pain points, partnering with engineering and business teams to build an internal analytics platform that delivered actionable insights for strategic decision making across the organization.

University of Michigan **Ann Arbor, MI**
Peer Facilitator, Weinberg Institute for Cognitive Science September 2023 – May 2024

- Advised students on academic planning, research opportunities, and campus resources.
- Coordinated 5+ community events per semester and co-maintained the weekly email updates to 200+ students and faculty.

Research Experience

[Social Computing]

Seeing Like an AI: How LLMs Apply (and Misapply) Wikipedia Neutrality Norms
Advisors: Prof. Eytan Adar and Prof. Eric Gilbert January 2024 – February 2025

- Developed code to generate LLM revision on biased Wikipedia texts and explored the outcomes with different prompting techniques including zero-shot prompting and constitutional AI chain; analyzed the LLM revision results with metrics including edit distances and precision-recall scores to measure the quality and investigate the differences with the human edition.
- Co-designed user studies to evaluate the human vs. LLM modified versions, collected Prolific data (N=147), and co-wrote the paper as the second author; paper accepted by *ICWSM 2026.*

[Collective Intelligence]

DISCO: Designing Intelligent Spaces For Collaboration
Advisors: Dr. Janet Johnson and Prof. Michael Nebeling June 2024 – April 2025

- Designed and developed six AI agents utilizing vector database-based RAG technology for dynamic knowledge support; Built an interactive full-stack application using React and Flask to integrate intelligent agent management, server-Unity data interaction, text-to-speech conversion, and real-time conversation analysis.

- Contributed to the design of MR collaborative spaces, supporting experiments with diverse agent appearances in Unity and exploring the design of various collaborative space elements; conducted workshop studies on 6 professional teams and co-wrote the exploratory paper; paper accepted by *CSCW 2025.*
- Extended this framework for Cog Sci honors thesis, implemented an AI-driven system to proactively and strategically enhance group deliberation, and evaluated via mathematical modeling, LLM-based simulations, and human meeting transcript analysis.

Virtually The Same or Realistically Different: Do Real-World Robots Differ From Their Virtual Representations

Advisor: Prof. Lionel Robert May 2024 – May 2025

- Developed the systematic review research plan including literature review strategies and paper screening criteria.
- Conducted paper coding via *Ryaan* and *Notion*, conducted part of the follow-up meta-analysis via *R* to analyze the effects of robot's physical embodiment on anthropomorphism, social presence, and user engagement.
- Published first-stage findings at *HRI 2025*; Currently preparing a journal version with more outcome metrics and alignment with the HRI analysis taxonomy, specifying field of application, task specification, and human-robot team composition.

VisQuestions: Constructing Evaluations for Communicative Visualizations

Advisor: Prof. Eytan Adar February 2023 – September 2024

- Developed a LLM-augmented web application that generates multiple-choice questions based on selected text and the learning objective framework, facilitates the visualization project management, and streamlines the evaluation test deployment.
- Co-conducted the system usability study with 9 participants and collected Prolific data (N=1096) to analyze the quality of system-generated tests; paper accepted by *CHI EA 2025.*

[Cognitive Psychology]

Computational Models on Human Memory Judgments

Advisor: Prof. Derek Huffman June 2021 – May 2022

- Coded the online experiment (N=153) that runs mnemonic similarity tasks to investigate the pattern separation of hippocampal function; analyzed the experiment data and co-analyzed the comparison among behavioral results and results from common computational hippocampus models.
- Wrote sections of behavioral experiments and one hippocampus model; paper accepted by *Psychological Review.*

Selected Project Experience

Analyzing Emotional Expression and Engagement Dynamics in Reddit Communities October 2024 – December 2024

- Extracted posts, comments, and replies in 8 subreddits with 33,719 unique users with Python's PRAW API.
- Applied NLP techniques to analyze online community dynamics, including word frequency analysis, sentiment analysis (TextBlob), emotion detection (DistilBERT), and SBERT-based comment classification; conducted time-series analysis to track the impact of user interactions on sentiment and subsequent behaviors.
- Report link: https://drive.google.com/file/d/1hz3FBRZG1L-cRSwyW6QCG1xK6E473ZXH/view?usp=share_link.

RepetitionVR: A VR Simulator to Overcome Social Anxiety and Isolation April 2024

- Co-developed a VR narrative project as part of the U-M course '*Extended Reality and Society'*, explored diverse social scenarios and constructed multiple social practice scenarios in Unreal Engine.
- Contributed to design motivation analysis, background interviews, development logs, and trailer production.
- Project showcased on the official website: https://sites.google.com/umich.edu/repetvr/home.

Interactive Exhibition: Worldwide Tea Culture September 2023 – February 2024

- Project within *ArtsEngine*, *Multidisciplinary Design Program, UMich;* Served as Engineering Sub-team Leader.
- Collaborated in designing an interactive tea culture exhibition, contributing to space layout and user scenario development.
- Designed the prototype using Arduino triggers to interact with the front-end tea card presentation and video control; constructed and managed 28 instances in the 10-day exhibition. Annual Expo Presentation Link**.**