Leyang Li

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Research Interests

Human-AI Interaction, Human-Centered AI, Interactive Systems, LLM Social Simulation, Usable Privacy and Security

Education

University of Notre Dame *Aug. 2022–May 2026 (expected)*
B.S. in Computer Science, Applied Computational and Mathematical Statistics (Suppl.) GPA: 3.95/4.00

Selected Publications and Preprints

(* Denotes equal contribution)

[P.1] **SP-BARBench: How Well Can LLMs Simulate Population-level Security and Privacy Attitudes, Behaviors, and Decisions?**
Leyang Li*, Yuxuan Li*, Hao-Ping (Hank) Lee, Sauvik Das
Work in Progress

[C.2] **AROMA: Mixed-Initiative AI Assistance for Non-Visual Cooking by Grounding Multimodal Information Between Reality and Videos**
Zheng Ning, **Leyang Li**, Daniel Killough, JooYoung Seo, Patrick Carrington, Yapeng Tian, Yuhang Zhao, Franklin Mingzhe Li, Toby Jia-Jun Li
In Proceedings of the 38th Annual ACM Symposium on User Interface Software and Technology (UIST'25)

[C.1] **Why am I seeing this: Democratizing End User Auditing for Online Content Recommendations**
Chaoran Chen, **Leyang Li**, Luke Cao, Yanfang Ye, Tianshi Li, Yaxing Yao, Toby Jia-Jun Li
In Proceedings of the 38th Annual ACM Symposium on User Interface Software and Technology (UIST'25)

Research Experience

SPUD Lab | Carnegie Mellon University *Jun. 2025–present*
Advisor: Prof. Sauvik Das Pittsburgh, PA

- **SP-BARBench**: A benchmark to simulate and evaluate LLM agents' privacy behavior, attitude, and reasoning [P.1].
  - Motivation: Human privacy behaviors are inconsistent and hard to study at scale; practitioners need standardized tasks and metrics for LLM agents' privacy behavior simulations to preemptively identify privacy risks for new product concepts.
  - Contribution: Defines a pipeline and evaluation protocols to systematically evaluate the privacy simulation performance of LLM agents.
  - Result: (work in progress)

SaNDwich Lab | University of Notre Dame *Sept. 2023–present*
Advisor: Prof. Toby Jia-Jun Li Notre Dame, IN

- **Non-Visual Cooking**: A mixed-initiative assistant that grounds information between real-world cooking and recipe videos to support blind/low-vision cooks [C.2].
  - Motivation: The highly visual nature of recipe videos creates a barrier for blind and low-vision (BLV) cooks, disconnecting them from their non-visual sensory experience of cooking.
  - Contribution: Introduced a mixed-initiative AI assistant that grounds video recipe instructions with the user's real-world cooking context. The system integrates the user's non-visual feedback with a wearable camera to provide both reactive and proactive assistance.
  - Result: A user study with BLV participants demonstrated AROMA's high usability and effectiveness, yielding design implications for accessible, context-aware AI assistants that leverage users' perceptual abilities.

- **Privacy Auditing Sandbox**: An interactive interface that democratizes end-user auditing of online content recommendations [C.1].
  - Motivation: Opaque recommendation systems disempower users and erode trust by preventing them from understanding how their data is used.
  - Contribution: Developed an interactive sandbox that allows users to audit recommendation systems by creating and controlling AI-generated virtual personas. The system simulates how algorithms respond to these personas and uses LLMs to analyze and visualize the causal links between user attributes and the content they are shown.
  - Result: User studies showed the sandbox improved users' understanding of algorithms and revealed opaque recommendation factors, informing guidelines for usable transparency and value-aligned AI.

Selected Projects

MindEcho, Winner project (1st place) at 2025 Hesburgh Libraries Hackathon *2025*
A meeting assistant with real-time transcription, mind map visualization, and keyword-based auto-completion.

P2P DHT, Course Project of CSE 40771 Distributed Systems *2024*
A peer-to-peer decentralized hash table with crash detection and recovery based on Chord, chain replication, and RPC.

A11yVate, Winner project (2nd place) at 2024 Hesburgh Libraries Hackathon *2024*
A crowdsourcing campus accessibility map platform with path optimization and customized LLM-suggestions.

Teaching Experience

ACES Tutor, CSE 30341 Operating System Principles *Aug. 2025–present*
Academically Collaborative Engineering Spaces (ACES) College of Engineering, University of Notre Dame

Teaching Assistant, CSE 30341 Operating System Principles *Jan.–May 2025*
Instructor: Prof. Douglas Thain CSE Department, University of Notre Dame

Industrial Experience

Software Engineer Intern | China Construction Bank Fintech *Jun.–Aug. 2024*
Big Data System Maintenance (Flink-based Kafka consumer) Shanghai, China

Data Analyst Intern | Everbright Securities Asset Management CO., LTD *Jul.–Aug. 2023*
Machine Learning for Investment (GRU with multi-head self-attention) Shanghai, China

Scholarship & Grants

Meruelo Family Summer Research Funding ($4,500) *2025*

Frank Reilly Scholar ($5,000) *2024*

Greater China Scholar ($5,000) *2022*

Selected Honors & Awards

Hesburgh Libraries Hackathon 2025 – 1st Place ($3,000) *2025*

American Statistical Association Data Fest - Best Use of External Data ($1,000) *2025*

Hesburgh Libraries Hackathon 2024 - 2nd Place ($2,000) *2024*

Dean's Honor List, University of Notre Dame *All Semesters 2023–2025*

Skills

Programming: Python, JavaScript & TypeScript, C/C++, Java, SQL, R, and others

Tools: React, Flask, Sanic, Django, PyTorch, sklearn, Figma, LaTeX, and others

Other: Photography, Procreate, Sketching, Gouache, Oil Painting

Languages: English, Mandarin