Jiachen Li

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EDUCATION

Northeastern University *Boston, MA*
Aug 2022 – current Ph.D. in Computer Science - Dr. Elizabeth Mynatt and Dr. Varun Mishra

Georgia Institute of Technology *Atlanta, GA*
Aug 2020 – May 2022 Master of Science in Digital Media (4.0/4.0)

Beijing University of Posts and Telecommunications (BUPT) *Beijing, China*
Sept 2015 – Jul 2019 Bachelor of Engineering in Electronic Information Science and Technology (Major 3.81/4.0)

University of California, Berkeley *Berkeley, CA*
Jan 2018 – May 2018 Exchange student

RESEARCH INTEREST

My research centers on examining the role of AI assistants in people's everyday experiences, with a particular emphasis on understanding the gap between current technology and human expectations in healthcare settings. My primary focus has been on the contexts of daily routine management and healthcare& wellness for older adults (OAs).

1) Sense-making and annotating for multi-modal personal health sensing data with LLM;
2) Creating LLM agents that can simulate daily behaviors of OAs;
   - Profile, schedule & routine, raw sensor data, social interactions
3) Providing support to OAs and their care networks with the help of LLM
   - Daily summaries, JIT interventions, Caregivers collaboration
4) Visual and voice AI assistant in assisting cooking tasks and routines for OAs with cognitive impairment.

EXPERIENCE

(Advisors) Graduate Researcher Assistant – NEU & Gatech *Boston, MA / Atlanta, GA*
May 2021 – present Advised by Dr. Elizabeth Mynatt & Dr. Varun Mishra

- Using AI (generative AI, ML) with smart home technology and conversational assistants (CAs) to help seniors with mild cognitive impairment (MCI) better manage their daily routines in different scenarios (medication management, meal preparation, indoor localization). Conducting user studies to evaluate their experiences.
- Studying different modalities (how, when, what, whom) of AI/ML in providing health intervention in different contexts.

Collaboration & Funding: AI-Caring Institute, Cognitive Empowerment Program (CEP)

(Committees) Graduate Researcher Assistant - NEU *Boston, MA*
Jun 2023 – present Advised by Dr. Dakuo Wang & Dr. Zhi Tan

- Studying how human and AI could collaborate to complete daily tasks (cooking, cancer patient-provider communication).
- Creating LLM agents to simulate OAs' behaviors and using the simulated agents to assist their daily livings

Summer Research Intern – Accenture (Digital Experiences) *San Francisco, CA*
June 2023 – Sep 2023 Advised by Manaswi Saha, Jordan Ackerman, Mike Kuniavsky

- Designed an LLM-based system *knowGap* to identify cross-disciplinary knowledge gaps in multi-person conversations.
- Implemented an initial prototype *StopGap* for jargon detection in online meetings and conducted an internal evaluation to synthesize findings and propose future design opportunities.

Graduate Researcher Assistant - Gatech *Atlanta, GA*
May 2022 – Aug 2022 Advised by Dr. Ashutosh Dhekne

- Designed a data visualization system of indoor localization for data sharing between older adults and their children, and conducted user research and usability testing with seniors and their children to synthesize design insights.

Guest Researcher - Gatech *Atlanta, GA*
Dec 2020 - Aug 2021 Advised by Dr. Gregory Abowd and Dr. Hyunjoo Oh

- Helped design PITAS, a thin-sheet robotic material that consists of a phase transition actuating layer and a heating/sensing layer for non-expert makers to create their own devices that can remotely communicate physical information. Helped on the hardware and software system design and workshop organization.

Independent Study Student Researcher - Gatech *Atlanta, GA*

April 2021 – May 2022 Advised by Dr. Michael Nistche

- Investigated the ways to design a TUI that emphasized the distance between digital and physical artifacts using a historical approach of writing cuneiform on clay boards. Conducted speculative design workshop and field study to learn participants' storytelling process.

Undergraduate Student Research Leader - BUPT *Beijing, China*

Mar 2019 – Oct 2019 Advised by Prof. Fei Lyu

- Designed and developed a low-cost tangible system for auxiliary abacus and mathematics learning for k-12 children. Conducted user studies with abacus teachers, parents and children.

Guest Researcher - Tsinghua University *Beijing, China*

Jul 2018 – Dec 2018 Advised by Prof. Chun Yu

- Designed flood-fill algorithm and ellipse fitting techniques based on 125Hz capacitive sensing signal on phone for heterotypic unintentional touch detection.

Undergraduate Student Research Leader - BUPT *Beijing, China*

Jul 2017 – Jul 2018 Advised by Prof. Haibin Yan, BUPT

- Built Familyship Face Videos in the Wild (FFVW), a novel video-based face recognition database with blood relationship labels, and proposed an advanced process of face recognition for blood relationship using convolutional neural network (CNN).

PUBLICATIONS

*** *arXiv & submitted to peer-review venues*

[1] **Jiachen Li** and collaborators, university students, mental health medication management

[2] **Jiachen Li** and collaborators, Cancer Patient-Provider Communication, AI&LLM

[3] **Jiachen Li**, Varun Mishra, Elizabeth Mynatt, Jonathan Bell, "Always Nice and Confident, Sometimes wrong": Developer's Experiences Engaging Generative AI Chatbots Versus Human-Powered Q&A Platforms, (arXiv '24)

[4] Szeyi Chan*, **Jiachen Li***, Bingsheng Yao, Amama Mahmood, Chien-Ming Huang, Holly Jimison, Elizabeth D Mynatt, Dakuo Wang "Mango Mango, How to Let The Lettuce Dry Without A Spinner?": Exploring User Perceptions of Using An LLM-Based Conversational Assistant Toward Cooking Partner, (arXiv '24)

[5] Bingsheng Yao, Guiming Chen, Ruishi Zou, Yuxuan Lu, **Jiachen Li**, Shao Zhang, Sijia Liu, James Hendler, Dakuo Wang, More Samples or More Prompt Inputs? Exploring Effective In-Context Sampling for LLM Few-Shot Prompt Engineering, (arXiv '24)

*** *Accepted*

[1] **Jiachen Li**, Bingrui Zong, Tingyu Cheng, Yunzhi Li, Elizabeth D Mynatt, Ashutosh Dhekne, "Privacy vs. Awareness: Relieving the Tension between Older Adults and Adult Children When Sharing In-home Activity Data", (***CSCW '23)***

[2] Niharika Mathur, Kunal Dhodapkar, Tamara Zubatiy, **Jiachen Li**, Brian Jones, and Elizabeth Mynatt. 2022. A Collaborative Approach to Support Medication Management in Older Adults with Mild Cognitive Impairment Using Conversational Assistants (CAs). In Proceedings of the 24th International ACM SIGACCESS Conference on Computers and Accessibility (***ASSETS '22***). Association for Computing Machinery, New York, NY, USA, Article 42, 1–14. https://doi.org/10.1145/3517428.3544830 (**Best Paper Award**)

[3] Tingyu Cheng, Jung Wook Park*, **Jiachen Li***, Charles Ramey, Hongnan Lin, Gregory D. Abowd, Carolina Brum Medeiros, HyunJoo Oh, and Marcello Giordano. 2022. PITAS: Sensing and Actuating Embedded Robotic Sheet for Physical Information Communication. In Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems (***CHI '22***). Association for Computing Machinery, New York, NY, USA, Article 172, 1–16. https://doi.org/10.1145/3491102.3517532. (**Honorable mention** in *Fast Company's 2022 Innovation by Design Awards*, **Student notable interaction award** in *2022 Core77 Design Award*)

[4] Ying Sun*, **Jiachen Li***, Yiwen Wei, Haibin Yan. Video-based Parent-Child Relationship Prediction, *IEEE VCIP, 2018.*

RESEARCH SKILLSETS

AI & ML: GenAI (LLM), sklearn, tensorflow, AI ethics
Qualitative user research: thematic analysis, interview/survey/focus group, field study, usability testing
Quantitative user research: python, R, data visualization
UbiComp: mobile sensors, smart home IoT

Tangible user interface: circuit/PCB/MCU, soft interface/robotics
Design & Digital media: Adobe, Final Cut Pro, Animation (Processing/pf.JS), installation, interactive fiction, craft