

Jiachen Li

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EDUCATION

Georgia Institute of Technology

Aug 2020 – May 2022 Master of Science in Digital Media (4.0/4.0)

Atlanta, GA

Beijing University of Posts and Telecommunications (BUPT)

Sept 2015 – Jul 2019 Bachelor of Engineering in Electronic Information Science and Technology (Major 3.81/4.0)

Beijing, China

University of California, Berkeley

Jan 2018 – May 2018 Exchange student

Berkeley, CA

EXPERIENCE

Graduate Student Assistant Researcher

Atlanta, GA

May 2021 – present Advised by Dr. Elizabeth Mynatt, GaTech

- Cooperating with Cognitive Empowerment Program (CEP) on using smart home technology and conversational assistants to help seniors with mild cognitive impairment better manage their daily routines.
- Conducting user research with CEP members and their care partners through participatory design sessions, field deployment, user interviews and surveys.
- Designed and developed a smart home reminder system including smart button, smart pillbox, phone, Google Home and other sensors to improve medication adherence.
- Built and deployed customized smart home control systems for dyads in CEP.
- Helped optimize the home data analysis process of sensors and devices and designed different data scenarios for AI Caring Institute.

Independent Study Student Researcher

Atlanta, GA

April 2021 – present Advised by Dr. Michael Nistche, GaTech

- Investigated the ways to design a tangible user interface that emphasized the distance between digital and physical artifacts using clay boards as the tools.
- Conducting 1 speculative design workshop and 1 week-long field study to learn how the participants would tell stories of certain topics using a historical approach of writing cuneiform that pressed objects to clay boards and left imprints as the archives.
- Building a tangible user interface combining physical (clay boards) and digital (animation and text) using conductive paints; conducting 1 design workshop with following surveys and interviews to learn participants' experience on interacting with the interface.

Guest Researcher

Atlanta, GA

Dec 2020 - Aug 2021 Advised by Dr. Gregory Abowd and Dr. Hyunjoo Oh, GaTech

- 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.
- Designed hardware and software systems to test the mechanical and electrical properties of the material, built an animated application to demo PITAS's sensor modality.
- Conducted a study with thirteen makers to gauge the accessibility, design space and limitations of using PITAS as a soft robotic material in designing physical telecommunication devices, organized and took minutes during the workshops.

Independent Study Student Researcher

Atlanta, GA

Jan 2021 – Aug 2021 Advised by Dr. Sang Leigh, GaTech

- Designed a tangible system that used biological signals (EMG, heart rate, etc.) to increase body awareness in yoga practice.
- Built a sensing system including hardware assembly, data transmission and signal filtering.
- Created an interactive figurative animation as representation and visualization of bodily data.
- Conducted workshops with yoga practitioners using the system and evaluated their feedback through interviews and surveys.

Undergraduate Student Research Leader

Beijing, China

Mar 2019 – Oct 2019 Advised by Prof. Fei Lyu, BUPT

- Designed and developed a low-cost system for auxiliary abacus and mathematics learning for k-12 children.
- Built a low-cost smart abacus that recorded the activity of beads and fingers in real-time and provided visual tips as feedback.

- Designed an interactive application based on the physical abacus aiming to overcome the long-standing difficulty in abacus education of building connections between abacus skills and vertical calculation.
- Conducted user interviews with abacus teachers, parents and children to find the gaps, deployed the system to an elementary school and conducted field study for a month.

Guest Researcher

Beijing, China

Jul 2018 – Dec 2018 Advised by Prof. Chun Yu, Tsinghua University

- Designed flood-fill algorithm and ellipse fitting techniques based on 125Hz capacitive sensing signal on phone for heterotypic unintentional touch detection.
- Extracted temporal sequences of the max-capacitive point in every core area; performed FFT analysis and generated the frequency spectrum; discovered disparity of spectrum distribution for intentional and unintentional touches.

Undergraduate Student Research Leader

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; parsed video data by family of father, mother and children from raw data with tree-structure.
- Proposed an advanced process of face recognition for blood relationship, including extracting key frame, face detection, face alignment and feature recognition using convolutional neural network (CNN).

PUBLICATIONS

[1] Niharika Mathur, Kunal Dhodapkar, Tamara Zubatiy, **Jiachen Li**, Brian D Jones, Elizabeth D Mynatt, A Collaborative Approach to Support Medication Management in Older Adults with Mild Cognitive Impairment Using Conversational Assistants (submitted to *CHI 22*)

[2] Tingyu Cheng, Jung Wook Park, **Jiachen Li**, Charles Ramey, Hongnan Lin, Gregory D. Abowd, Dr. Carolina Brum Medeiros Flipr Sensing, HyunJoo Oh, Marcello Giordano, PITAS: Towards Personal Fabrication of Self-contained Soft Actuators and Sensors for Physical Telecommunication (submitted to *CHI 22*)

[3] **Jiachen Li**, Michael Nitsche, Kuneiform: Design A Tangible Interface Based on the Perceived Distance Between Physical and Digital (in preparation)

[4] Elaine Liu, **Jiachen Li**, Sang Leigh, Michael Nitsche, Augmenting Shared Space Using Body-Awareness-Promoting Interactions to Enhance Yoga Group Experience (in preparation)

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

HONORS & AWARDS

2016-2017 First-Class Scholarship

Oct 2017

Outstanding Peer Tutor (10/120)

Jun 2017

Outstanding Student (5/120)

Jan 2017

OTHER SKILLS

Hardware-related: MCU(Arduino), VHDL, Logisim, Multisim

Programming: HTML/CSS/JS, Processing/p5.JS, C/C++, Matlab, python, Java

Design: Adobe Photoshop/Indesign/Illustrator, Final Cut Pro

Language: Proficient in English and Chinese (Mandarin)

Interest: Crafts, Photography, Animals, Travelling