

# Xiaoyi Tian

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## SKILLS

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**User-Centered Research:** Contextual inquiry, interview, survey, storyboard, usability testing, persona, qualitative coding, dialogue act tagging, ethnography, case study

**Statistical Analysis:** R, SPSS, JMP, Stata

**Programming Languages and Frameworks:** Python, HTML, CSS, Bootstrap, Javascript, Java, C, VB, SQL, MATLAB, Blazor, React, Blockly

## EDUCATION

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**Ph.D. in Human-Centered Computing** 2020 - 2024 (expected)  
University of Florida Gainesville, FL

**M.S. in Information Science** 2018 - 2020  
University of Pittsburgh Pittsburgh, PA

**B.Mgmt. in Management Science** 2014 - 2018  
Anhui University Hefei, China

## EXPERIENCE

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**Graduate Research Assistant** | Advisor: Kristy Boyer 08/2020 - present  
LearnDialogue Lab, University of Florida Gainesville, FL

- Designed and developed a conversational AI development environment: *AMBY*, featuring youth-centered visual elements, AI conceptual scaffolding and dual input modalities (text and speech) for middle school students
- Conducted contextual inquiry and usability studies with 46 youth (aged 12-13) and 11 adults to understand user experiences and challenges while using *AMBY*. The analysis contributes design implications for conversational AI authoring tools that empower AI learning for youth.
- Clustered affective states and problem-solving behaviors of 86 undergraduate students in an adaptive block-based programming environment for novice learners. This study provided insight into how frustration trajectory models can guide system adaptivity during problem-solving episodes.
- Modeled linguistic alignment and its relationship with satisfaction outcome in collaborative programming dialogues using Bayesian mixed-effect models

**Research Intern** | Supervisors: Michael Madaio and Amy Ogan 10/2019 - 07/2020  
Human-Computer Interaction Institute, Carnegie Mellon University Pittsburgh, PA

- Automated data collection for a child literacy system used by 500+ participants in Côte d'Ivoire over 8 months
- Visualized user phonological awareness curriculum progression of 8 units and 1,000+ weekly interaction logs

**Research Assistant** | Supervisor: Erin Walker 04/2019 - 05/2020  
Facet Lab, University of Pittsburgh Pittsburgh, PA

- Conducted qualitative dialogue tagging on rapport behaviors of middle school learners with a social robot
- Utilized Independent Component Analysis (ICA) to model linguistic rapport components extracted from human coding and automated LIWC measurements
- Offered design recommendations for personalizing learner experiences towards over long-term human robot interactions

## PROJECTS

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**StudyBuddy: a Chatbot for Effective Study Habits** | Collaborative project (lead) at Pitt 09/2019 - 10/2020  
Designing a chatbot prototype to induce and sustain study behavioral change for university first-year students

- Utilized mix-method to investigate the feasibility of chatbots for study behavioral change of college students
- Formed design inquiry by interviewing with 3 peer tutors and surveying 87 freshmen
- Developed a chatbot prototype in Slack using DialogFlow and Slack API
- Conducted in-depth interviews with 8 students, 5 faculty and a usability survey with 118 students
- Offered design recommendations for chatbots on building trust with users, incorporating gender and individual differences, importance of context, balancing between immediate help and long-term support

## AWARDS AND HONORS

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<b>Gartner Group Graduate Fellowship</b> , University of Florida	2022
<b>Outstanding Undergraduate Thesis (Top 1% in the Class)</b> , Anhui University	2018
<b>Academic Excellence Scholarship</b> , Anhui University	2015 & 2016 & 2017
<b>“Merit Student”</b> , Anhui University	2015 & 2017

## SELECTED PUBLICATIONS

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Please check my [Google Scholar](#) for full publications.

- **A Summer Camp Experience to Engage Middle School Learners in AI through Conversational App Development**  
Gloria Ashiya Katuka, Yvonika Auguste, Song Yukyeong, [Xiaoyi Tian](#), Amit Kumar, Mehmet Celepkolu, Kristy Elizabeth Boyer, Joanne Barrett, Maya Israel, Tom McKlin.  
*Proceedings of the 54th ACM Technical Symposium on Computer Science Education (SIGCSE)*. To appear. 2023.
- **Early Design of a Conversational AI Development Platform for Middle Schoolers**  
Amit Kumar, [Xiaoyi Tian](#), Mehmet Celepkolu, Maya Israel, Kristy Elizabeth Boyer.  
*Poster in 2022 IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)*. September. 2022.
- **Modeling Frustration Trajectories and Problem-Solving Behaviors in Adaptive Learning Environments for Introductory Computer Science**  
[Xiaoyi Tian](#), Joseph B. Wiggins, Fahmid Morshed Fahid, Andrew Emerson, Dolly Bounajim, Andy Smith, Kristy Elizabeth Boyer, Eric Wiebe, Bradford Mott, James Lester.  
*Proceedings of International Conference on Artificial Intelligence in Education (AIED)*. July. 2021.
- **Progression Trajectory-Based Student Modeling for Novice Block-Based Programming**  
Fahmid Morshed Fahid, [Xiaoyi Tian](#), Andrew Emerson, Joseph B. Wiggins, Dolly Bounajim, Andy Smith, Eric Wiebe, Bradford Mott, [Kristy Elizabeth Boyer](#), James Lester.  
*Proceedings of the 29th ACM Conference on User Modeling, Adaptation and Personalization (UMAP)*. July. 2021.
- **Let’s Talk It Out: A Chatbot for Effective Study Habit Behavioral Change**  
[Xiaoyi Tian](#), Zak Risha, Ishrat Ahmed, Arun Balajiee Lekshmi Narayanan, Jacob Biehl.  
*Proceedings of the ACM on Human-Computer Interaction*. 5, CSCW1. April. 2021.
- **Understanding Rapport over Multiple Sessions with a Social, Teachable Robot**  
[Xiaoyi Tian](#), Nichola Lubold, Leah Friedman, Erin Walker.  
*Proceedings of International Conference on Artificial Intelligence in Education (AIED)*. July. 2020.
- **Dominance as an Indicator of Rapport and Learning in Human-Agent Communication**  
Amanda Buddemeyer, [Xiaoyi Tian](#), Erin Walker.  
*Student Research Workshop in Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics (ACL)*. July. 2020.

## ACADEMIC AND COMMUNITY SERVICES

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Microsoft TEALS volunteer, teacher for high school computer science (CS1, Python)	08/2022 - present
Reviewer of ACM Conference on Human Factors in Computing Systems (CHI) 2023	
Reviewer of International Conference on Educational Data Mining (EDM) 2022	
Reviewer of ACM Conference on Computer-Supported Cooperative Work (CSCW) 2020	

Last update: 10/16/2022