

# Xiaoyi Tian

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## EDUCATION

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University of Florida <i>Ph.D. in Human-Centered Computing</i>	2020 - present Gainesville, FL
University of Pittsburgh <i>M.S. in Information Science</i>	2018 - 2020 Pittsburgh, PA
Anhui University <i>B.Mgmt. in Management Science</i>	2014 - 2018 Hefei, China

## EXPERIENCE

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<b>Graduate Research Assistant</b>   Advisor: Kristy Boyer <i>LearnDialogue Lab, University of Florida</i>	08/2020 - present Gainesville, FL
<ul style="list-style-type: none"><li>Modeled student engagement and collaboration patterns using multimodal data streams (e.g., facial expressions, acoustics and dialogue) during middle school students' co-creation of conversational apps</li><li>Understood affective states and problem-solving behaviors in adaptive programming environments</li></ul>	
<b>Research Intern</b>   Supervisors: Michael Madaio and Amy Ogan <i>Human-Computer Interaction Institute, Carnegie Mellon University</i>	10/2019 - 07/2020 Pittsburgh, PA
<ul style="list-style-type: none"><li>Automated data collection for a child literacy system used by 500+ participants in Côte d'Ivoire over 8 months</li><li>Created data pipelines from 30+ MYSQL database tables and monitored system usage using Python and R</li><li>Visualized user curriculum progression of 8 units and 1,000+ weekly logs of learning actions</li><li>Plotted children's learning curve of phonological awareness skills acquisition and modeled students using Bayesian Knowledge Tracing (BKT)</li></ul>	
<b>Research Assistant</b>   Supervisor: Erin Walker <i>Facet Lab, University of Pittsburgh</i>	04/2019 - 05/2020 Pittsburgh, PA
<ul style="list-style-type: none"><li>Conducted qualitative research on long-term rapport management of middle school learners with a social robot</li><li>Coded multiple-sessions human-robot dialogue on rapport strategies and dominance behaviors</li><li>Utilized Independent Component Analysis (ICA) to model linguistic rapport components extracted from human coding and automated LIWC measurements</li></ul>	

## PROJECTS

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<b>Camp DIALOGS</b>   <i>RA project at UF</i>	08/2021 - Present
<ul style="list-style-type: none"><li>Facilitated summer camps for middle school students' AI learning and collaboratively creating conversational apps</li><li>Analyzed approximately 20 hours of video, audio, screen recording and interaction logs data from 7 student groups</li><li>Classified student engagement and collaboration patterns using multimodal data streams</li></ul>	
<b>Modeling Linguistic Alignment in dialogues</b>   <i>Course project (lead) at UF</i>	01/2021 - present
<ul style="list-style-type: none"><li>Investigated the role of linguistic alignment in middle school students collaborative problem solving</li><li>Modeled linguistic alignment on both syntax level and lexicon level among 7812 utterances</li><li>Performed Bayesian mixed-effect model on linguistic alignment and students' satisfaction toward their partner</li></ul>	
<b>StudyBuddy: a Chatbot for Effective Study Habits</b>   <i>Collaborative project (lead) at Pitt</i>	09/2019 - present
<ul style="list-style-type: none"><li>Utilized mix-method to investigate the feasibility of chatbots for study behavioral change of college students</li><li>Formed design inquiry by interviewing with 3 peer tutors and surveying 87 freshmen</li><li>Developed a chatbot prototype in Slack using DialogFlow and Slack API</li><li>Conducted in-depth interviews with 8 students, 5 faculty and a usability survey with 118 students</li></ul>	
<b>Social Media Attention and Organizational Fundraising</b>   <i>Independent project at Pitt</i>	01/2019 - 04/2019
<ul style="list-style-type: none"><li>Performed quantitative analysis 414,312 Twitter posts of local non-profit organizations and their donations records</li><li>Defined measurements of social media strategies and public attention</li><li>Conducted negative-binomial regression analysis to understand relationships between social media strategies, public attention and donation gained</li></ul>	

## PUBLICATIONS

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### **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 Balajee 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.

### **Online Educational Information Quality Modeling and Perceived Difference Comparison**

**Xiaoyi Tian**, Jing Li, Qin Yu.

In *Journal of Hefei Normal University*. 2016, 34(5).

## SKILLS

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

**User-Centered Research:** Interview, survey, storyboard, persona, usability test, qualitative coding, dialogue act tagging

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

## AWARDS AND HONORS

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**Outstanding Undergraduate Thesis (Top 1% in the Class)**, Anhui University

07/2018

**Academic Excellence Scholarship**, Anhui University

2015 & 2016 & 2017

**'Merit Student'**, Anhui University

2015 & 2017

## INVITED TALKS AND SEMINARS

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**Guest speaker of undergraduate HCI course**, University of Florida

03/2021

*Let's talk it out: A chatbot for effective study behavioral change*

## SERVICES

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Reviewer of CSCW 2020

*Last update: 10/26/2021*