

# Xiaoyi Tian

412-584-2786 | [tianx@ufl.edu](mailto:tianx@ufl.edu) | [linkedin.com/in/xiaoyi-tian/](https://www.linkedin.com/in/xiaoyi-tian/) | [www.txiaoyi.com](http://www.txiaoyi.com)

## SKILLS

---

**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

---

**Ph.D. in Human-Centered Computing** 2020 - present  
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

---

**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: Amy Ogan, Michael Madaio 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 logs of learning actions

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

- Conducted qualitative research on multi-sessions rapport management 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

## PROJECTS

---

**Linguistic Alignment in Collaborative Learning Dialogues** | Course project (lead) at UF 01/2021 - present  
Research on the role of linguistic alignment in middle school students collaborative problem solving dialogues

- Parsed the syntactic structure and extracted lexical types for both task-relevant and non-task words
- Calculated linguistic alignment on both syntax level and lexicon level for each dialogue exchange
- Performed Bayesian mixed-effect modeling on linguistic alignment and students' satisfaction toward their partner

**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

---

<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

## PUBLICATIONS

---

### Journal Articles

- J2 **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.
- J1 **Online Educational Information Quality Modeling and Perceived Difference Comparison**  
Xiaoyi Tian, Jing Li, Qin Yu.  
*In Journal of Hefei Normal University*. 2016, 34(5).

### Conference Papers

- C6 **AI Made By Youth: A Conversational AI Curriculum for Middle School Summer Camps**  
 Yukyeong Song, Gloria Katuka, Joanne Barrett, Xiaoyi Tian, Amit Kumar, Tom McKlin, Mehmet Celepkolu, Maya Israel and Kristy Elizabeth Boyer  
*The Thirteenth Symposium on Educational Advances in Artificial Intelligence (EAAI)*. To appear.
- C5 **A Summer Camp Experience to Engage Middle School Learners in AI through Conversational App Development**  
 Gloria Ashiya Katuka, Yvonika Auguste, Yukyeong Song, 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.
- C4 **Applying Cognitive Load Theory to Examine STEM Undergraduate Students’ Experiences in An Adaptive Learning Environment: A Mixed-Methods Study**  
 Dolly Bounajim, Arif Rachmatullah, Madeline Hinckle, Bradford Mott, James Lester, Andy Smith, Andrew Emerson, Fahmid Morshed Fahid, Xiaoyi Tian, Joseph B Wiggins, Kristy Elizabeth Boyer, Eric Wiebe.  
*Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. October. 2021.
- C3 **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.
- C2 **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.
- C1 **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.

### Workshop Papers and Posters

- W2 **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.

## W1 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

Microsoft TEALS volunteer, teacher for high school computer science (CS1, Python)	08/2022 - present
Reviewer of ACM CHI 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	

---

## INVITED TALKS AND SEMINARS

<b>Guest speaker of AI workshop for Florida middle school teachers</b> , University of Florida	07/2022
<i>Camp DIALOGS: Teaching Conversational AI in Middle School Summer Camps</i>	
<b>Guest speaker of undergraduate HCI course</b> , University of Florida	03/2021
<i>Let's talk it out: A chatbot for effective study behavioral change</i>	

*Last update: 11/20/2022*