# Yunkai Xu

*Last updated in Feb 2026*

yqx5322@psu.edu Xuyk021.github.io Linkedin Google Scholar

## Education

**Pennsylvania State University** *Aug 2024 - Present*
*MS in Informatics*

- GPA: 3.93/4.0
- **Advisor:** Dr. Saeed Abdullah
- **Research Interests:** Human-Computer Interaction, Conversational AI for Healthcare
- **Coursework:** Data Mining, HCI Research Method, Human-centered AI, Quantitative Research in Communication

**Zhejiang University** *Sept 2020 - June 2024*
*BE in Industrial Design*

- GPA: 3.96/4.0 *Ranking* : 6/55
- **Advisor:** Dr. Guanyun Wang, Dr. Wei Xiang
- **Research Interests:** Accessible HCI, Interactive Systems, 3D Printing and Fabrication
- **Thesis:** *Research and Design Application of FDM-based 3D Printing for Biomimetic Hair*
- **Coursework:** Information Product Design, Information & Interaction Design, User Experience Design

## Experience

**Teaching Assistant** *State College, USA*
*Pennsylvania State University - IST 597 Special Topics: Human-Centered AI* *January 2026 - Present*

- Assisted in course design and development, including creating lecture materials, assignments, and projects focused on human-centered AI.

**Research Internship** *State College, USA*
*Pennsylvania State University - Well-being and Health Innovation Lab* *November 2024 - Present*

- Developed and evaluated an LLM-powered voice assistant to deliver cognitive simulation therapy for individuals with dementia, conducting iterative design cycles and pilot user studies to refine the interaction.
- Co-developed a voice-based cancer care intervention system with the **University of Pittsburgh**, integrating script-based dialogue and interventions in real-word scenarios.
- Designing and developing a chatbot testing platform to study how visual cues influence user trust in health information search results, also including completing part of the quantitative testing protocol.
- **(Thesis)** Investigating how large language models support mental health interventions across diverse languages and cultural contexts, including building a multilingual dataset and designing a quantitative evaluation protocol.

**Research Internship** *Notre Dame, USA*
*The University of Notre Dame - Research in Networks and Groups Lab* *June 2025 - August 2025*

- Engineered a multi-user collaborative Mixed Reality (MR) system in Unity to investigate remote teamwork dynamics. Implemented a framework for shared tasks, synchronous interaction, and condition-based experimental control.
- Authored the Related Work section on MR-mediated collaboration and coordination, synthesizing prior findings to frame research questions and hypothesis.

**Research Internship** *Hangzhou, China*
*International Design Institute of Zhejiang University* *April 2023 - April 2024*

- Led a project developing an LLM-based Augmentative and Alternative Communication (AAC) tool (*SocializeChat*), directing all phases from system design and qualitative user study protocol to data collection and manuscript preparation; Authored a CHI'24 submission as **first student author**.
- Co-led a 3D printing prototyping project (*Xhair*) integrating HCI and fabrication; contributed to a UIST'24 submission as **second student author (Accepted, 26% acceptance rate)**.

**Core Founder Member** *Hangzhou, China*
*PAELEAP Technology Co., Ltd.* *April 2022 - April 2023*

- Co-founded *PAELEAP* to develop a virtual companion for elderly adults, leading the design of interaction and motion capture. Our work was **featured on the front page of People's Daily, China's leading national newspaper**.

## Publications

*Visit my personal website or Google Scholar for more latest publications and projects.*

**When an AI Is Thinking: How AI Thinking Cues Influence Perceived Message Credibility, Trust, and User Experience with Generative AI Systems**

Cheng Chen*, ***Yunkai Xu***, Saeed Abdullah

*Under review.*

**From Queries to Conversations: How Interface Modality Shapes Exploratory Search Behavior**

Matt Murtagh White*, ***Yunkai Xu***, Nicole León, Jovan Jeromela, Felix Vanden Borre, Hiba Al-Nabhani

*Under review.* [Link]

**SocializeChat: A GPT-Based AAC Tool Grounded in Personal Memories to Support Social Communication**

Wei Xiang, ***Yunkai Xu****, Yuyang Fang, Zhuyu Teng, Zhaoqu Jiang, BeiJia Hu, Jinguo Yang

*SMC 2025, preprint.* *Corresponding author. [Link]

**Athena: A Conversational Book Discovery Interface Combining LLM-Powered Retrieval-Augmented Generation and Interactive Graph Visualization**

Matt Murtagh White*, ***Yunkai Xu****, Nicole León*

*UIST 2025 Poster.* *Co-first author. [Link]

**Xhair: 3D Printing Hair-like Structures with Multi-form, Multi-property and Multi-function**

Guanyun Wang, Junzhe Ji, ***Yunkai Xu***, Lei Ren, Xiaoyang Wu, Chunyuan Zheng, Xiaojing Zhou, Xing Tang, Boyu Feng, Lingyun Sun*, Jiaji Li*

*UIST 2024 Full Paper.* [Link]

**SocializeChat: a GPT-based AAC Tool for Social Communication Through Eye Gazing**

Yuyang Fang, ***Yunkai Xu***, Zhuyu Teng, Zhaoqu Jiang, Wei Xiang*

*Ubicomp 2023 Poster.* [Link]

## Selected Academic and Personal Projects

**Athena: A Conversational Book Discovery System** *2025*

- Designed and Developed a conversational book discovery system with LLM-powered retrieval-augmented generation (RAG) and interactive graph visualization, enabling users to discover books through natural language queries and explore relationships between books feedback.
- Tools Used: Conversational Agents Design and Development, User Study, Figma, Research Writing

**EnvVISTA: An Conversational Data Exploration System for Urban Data** *2025*

- Developed the end-to-end prototype based on NYC OpenData: implemented interactive maps and game mechanics, and prototyped LLM-driven narratives, conversational Q&A, and insight checks.
- Tools Used: Python, Data Visualization, Conversational Agents Design and Development

**SocializeChat: LLM-Powered AAC Tools for Social Interaction** *[View PDF] 2023*

- Designed a mobile application with LLM for people with physical disabilities, helping them to have fluent and engaging social conversations with others.
- Tools Used: Swift, Python, User Study, Figma, Research Writing

**SmartLumina: In-car Lighting Interactive Design** *[View PDF] 2023*

- Developed a new interaction system designed for both autonomous drivers and regular passengers familiar with these vehicle conditions, enabling natural interaction through gestures and provides relaxing feedback through lighting.
- Tools Used: User Study, Python, Arduino

**Chasing: A VR Parkour Game** *[View PDF] 2023*

- The theme style of this VR parkour game is "Data Punk" parkour game. Players experience the game from a first-person perspective and interact using VR controllers.
- Tools Used: Unity, C#, Oculus Development

## Honors and Awards

***2024*** Outstanding Undergraduate Thesis of Zhejiang University (Xhair)

***2020 - 2022*** Third Prize, Academic Scholarships of Zhejiang University (Top 20%)

***2022*** Third Prize in East China, China Collegiate Computing Contest

***2022*** Second Prize, Zhejiang University Industrial Design Competition

## Skill Set

**Programming:** C++, C, Java, Python (ML, Data Analysis, LLM Agents), C# (Unity), HTML/CSS, Vue.js, AWS (S3, Lambda), Alexa Skills Kit

**Languages:** TOEFL iBT(*MyBestScore:* 107)