Yunkai Xu

📍 State College   ✉ yqx5322@psu.edu   📞 +1814-280-6040   🔗 Xuyk021@github.io   in Linkedin-Yunkai

📖 Design Portfolio   🎓 Google Scholar

Education

Pennsylvania State University   *Aug 2024 - Now*
Ms in Informatics
- GPA: 4.0/4.0
- **Advisor:** Dr. Saeed Abdullah
- **Coursework:** Data Mining, Foundation of Human-centered Design, HCI Research Method, Human-centered AI

Zhejiang University   *Sept 2020 - June 2024*
BS in Industrial Design
- GPA: 3.97/4.0 *Ranking* : 6/55
- **Advisor:** Dr. Guanyun Wang, Dr. Wei Xiang
- **Coursework:** Information Product Design, Information & Interaction Design, User Experience Design, Computer Game Programming

Experience

Research Internship   *Notre Dame, USA*
The University of Notre Dame   *June 2025 - NOW*
- Designed and implemented an MR interaction system for remote multi-user collaboration (Unity, Meta XR SDK), enabling condition-based user studies.
- Led the literature review part and drafted the Related Work section on MR-mediated collaboration and coordination.

Research Internship   *State College, USA*
Pennsylvania State University   *November 2024 - NOW*
- Developed an GPT-based voice assistant to deliver cognition simulation therapy for people with dementia.
- Developed a voice assistant to deliver cancer care intervention. This project is a collaboration with the University of Pittsburgh Medical Center.
- Leading a project to investigate the ability of LLMs to provide therapy for multilingual people.

Research Internship   *Hangzhou, China*
International Design Institute of Zhejiang University   *April 2023 - April 2024*
- Led an AI-based AAC tool project and 3D printing project in the laboratory and submitting to CHI'24, UIST'24.
- Submitted a paper to CHI'24 as **the first student author**; Submitted a paper to UIST'24 as **the second student author**. (Accepted, 26%)

Core Founder Member   *Hangzhou, China*
Pixel Leap   *April 2022 – April 2023*
- Designed interaction motions for virtual human and user scenarios (greetings, turn-taking, pointing, hand-offs); Created character animations using motion capture devices and wrote animation scripts in Unity.

Publications

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

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, In Press.   *Corresponding author.

Athena: A Conversational Book Discovery System with LLM-Powered Retrieval-Augmented Generation (RAG) and Interactive Graph Visualization

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

UIST 2025 Poster, In Press.   *Co-first author.

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. [Full Paper] ⬈

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. [Full Paper] ⬈

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.
- Tools Used: Intelligent Chatbot Design and Development, User Study, Figma, Research Writing

EnvVISTA *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, Intelligent Chatbot Design

SocializeChat *[View PDF]* ⬈ *2023*

- Designed a mobile application with ChatGPT 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

2020 - 2022 Academic Excellence Student Model

2020 - 2022 Third Prize, Academic Scholarships of Zhejiang University

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 (Machine Learning, Data Analysis, LLMs), C#, HTML/CSS, Vue

Languages: TOFEL(108)