Qianjie Wei

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RESEARCH INTEREST

Human-Computer Interaction, AR/VR Interaction, Accessibility, Healthcare, Human-AI collaboration, etc.

EDUCATION

- **The Hong Kong University of Science and Technology (Guangzhou)** *Sep 2023 - Jul 2025 (Expected)*
  MPhil in Computational Media and Arts Guangzhou, China
  ◦ GPA: 3.92/4.3
  ◦ Advisor: Prof. Mingming Fan (Primary), Prof. Yi Cai (Co)

- **Tongji University** *Sep 2018 - Jun 2023*
  Bachelor of Engineering in Industrial Design, College of Design and Innovation Shanghai, China
  ◦ GPA: 4.43/5.0 (Ranking Top 10%)
  ◦ Thesis: Digital Partner Design for the Communication of Autism Apectrum Disorder (ASD) Children
  ◦ Advisor: Prof. Xiaohua Sun (Graduation Thesis)

PEER-REVIEWED CONFERENCE PUBLICATIONS

[C.1] Qianjie Wei, Jingling Zhang, Pengqi Wang, Xiaofu Jin, Mingming Fan. 2024. **Augmented Library: Toward Enriching Physical Library Experience Using HMD-Based Augmented Reality**. In the *The 17th International Symposium on Visual Information Communication and Interaction (VINCI 2024)*.

UNDER-REVIEW MANUSCRIPTS

[M.1] Qianjie Wei, Xiaoying Wei, Yiqi Liang, Fan Lin, Nuonan Si, Mingming Fan. RemoteChess: Enhancing Older Adults' Social Connectedness via Designing a Virtual Reality Chinese Chess (Xiangqi) Community. Submitted to *ACM CHI Conference on Human Factors in Computing Systems (CHI '25)*, under review.

[M.2] Yiqi Liang, Fan Lin, Nuonan Si, Qianjie Wei, Chutian Jiang, Mingming Fan. From Scenarios to Strategies: A Systematic Framework for Understanding Spatial Information Needs of BLV people. Submitted to *ACM CHI Conference on Human Factors in Computing Systems (CHI '25)*, under review.

[M.3] Nuonan Si, Junchun Shen, Fan Lin, Qianjie Wei, Jinni Zhou, Mingming Fan. Exoskeleton Use in Lower Limb Rehabilitation: A Qualitative Study of Clinical Practices and Perspectives of Physiotherapists and Patients in China. Submitted to *ACM CHI Conference on Human Factors in Computing Systems (CHI '25)*, under review.

PAPER IN PROGRESS

[P.1] Jingling Zhang#, Qianjie Wei#, Xiaoying Wei, Mingming Fan. **Exploring the Design of Virtual Reality Museums to Support Remote Visitation With Older Adults**.

[P.2] Beiyan Cao, Pengqi Wang, Qianjie Wei, et al. Exploring the Design of AI-mediated Emotion Communication for Deaf and Hard of Hearing People in Online Meetings.

SELECTED PROJECTS

- **Craftsman Journey: Worker-centered Digital Management Platform** *May 2022 - Jul 2022*
  University-industry Cooperation Program between Tongji University and BOSCH [🎥]
  ◦ Developed an App that integrates site management and personal development, facilitating site work and enhancing workers' awareness of career development.
  ◦ Tools: used Figma for UX/UI design, and used React + TypeScript for development.
  ◦ Applied think-aloud usability test, A/B testing, and heat-map analysis to assess the user experience of the App.

- **SmartHand: Hand Rehabilitation System for Hemiplegic Patients** *Apr 2022 - Jun 2022*
  Won the first prize in Shanghai Industrial Design Competition (Top 5%)

- Conceptualized and developed a hemiplegic rehabilitation system facilitated by data loop of electromyographic signals and electrical stimulation. The system consists of two wearable devices and a mobile App, enabling hemiplegic patients to perform precise grip training exercises at home.
- Implemented gesture image recognition in Python using Mediapipe and OpenCV for accurate motion tracking.
- Monitored the user's muscle activity by establish interaction between Arduino and EMG sensors.
- Engineered the structural components of the wearable devices, leveraged Figma to develop the App prototype.

- **ARFinding: A Home Item Management System for Older Adults**   *Mar 2022 - May 2022*
  Advised by Prof. Xiaohua Sun at the Center for Digital Innovation of Tongji University   [■◀]
- Developed a system using RFID tags, voice input, and AR navigation to help older adults manage household items.
- Hardware: constructed RFID indoor positioning system through RFID tags, NFC, terminal machine, and antenna box.
- Software: implemented the AR navigation App through Unity 3D.
- Conducted surveys with target users to discern features that would optimize the experience and improve usability.

- **Running Food: A Serious Game for Popularizing the Food Carbon Footprint**   *Nov 2021 - Dec 2021*
  University-industry Cooperation Program between Tongji University and Tencent   [■◀]
- Designed and developed a serious game that explores the carbon footprint of three scenarios (food production, purchase, and consumption), calling for less food waste and sustainable living concept.
- Created shaders and visual effects for characters, text, cutscenes, and dynamic dialogue system in Roblox engine, implemented the game's interaction logic through Lua programming language.
- Ensured a seamless and intuitive user experience by refining gameplay mechanics and interface and conducting playtesting and iteration to optimize player engagement and satisfaction.

PROFESSIONAL EXPERIENCE

- **Accessible & Pervasive User EXperience (APEX) Lab, HKUST(GZ) [⊕]**   *Sep 2023 - Present*
  Research Student   Guangzhou, China
  Advisor: Prof. Mingming Fan.
  Conduct quantitative and qualitative research at the intersection of HCI, AR/VR/MR, and AI, with a particular focus on aging, accessibility, and learning.

- **Center for Digital Innovation, Tongji University [⊕]**   *Mar 2023 - Jun 2023*
  Research Intern   Shanghai, China
  Advisor: Prof. Xiaohua Sun.
  Research on an augmented assistive communication system based on large language models.

- **Fablab, Tongji University [⊕]**   *Sep 2022 - Dec 2022*
  Research Intern   Shanghai, China
  Advisor: Prof. Saverio Silli.
  Research on computational design and sustainable manufacturing.

HONORS AND AWARDS

- **National Encouragement Scholarship at Tongji University**, Top 5%   *Oct, 2022*
- **Shanghai Industrial Design Competition**, First Prize   *Oct 2022*
- **The 7th Think Youth-Shanghai International Digital Creation, Innovation & Entrepreneurship**   *Aug 2022*
  Competition, First Prize
- **The Best User Experience Design Project**, Held by BOSCH   *Mar 2022*
- **Outstanding Student Scholarship at Tongji University**, Top 10%   *Oct, 2021*

SKILLS

- **Languages:** Mandarin (Native), English (Fluent, IELTS 7.0), German (Basic)
- **AR/VR Development:** Proficient in developing AR/VR applications and interactions using unity (e.g., Multiplayer VR development, write C# scripts to implement AR/VR interaction)
- **UX/UI and Interaction Design:** Skilled in Figma, Adobe kits (PS, AI, PR...)
- **Open-source Hardware and Programming:** Arduino IDE, PCB Engineering
- **Industrial Design and Engineering:** Familiar with Blender, Rhino
- **Research:** Literature Review, User Study, Quantitative and Qualitative Data Analysis