

# QIXIN (SIA) WANG

Email: sia\_wang1998@163.com | Phone: +86 18600720166

## EDUCATION

### Tsinghua University

Candidate for Master of Computer Science

• Overall GPA: 3.91/4.0

Beijing, China

2022 - 2025

### Beihang University

Bachelor of Visual Communication Design (Digital Media Art)

• Overall GPA: 3.61/4.0

Beijing, China

2017 - 2021

## RESEARCH INTEREST

Human-Computer Interaction (HCI), Human-Centered AI, Assistive Technology, Multi-modal Interaction, Affective Computing, Social Good, User Experience Design (UX)

## PUBLICATION & CONFERENCE

- **Qixin Wang**, Chenglin Guo, Songtao Zhou, and Xiaoyu Qin. 2024. *Emotional Speech Synthesis via Visual Context Perception*. Oral presented at the Meeting of National Conference on Man-Machine Speech Communication (**NCMMSC 2024**). China computer federation, Beijing, China.
- Zeyu Jin, Jia Jia, **Qixin Wang**, Kehan Li, Shuoyi Zhou, Songtao Zhou, Xiaoyu Qin, Zhiyong Wu. *SpeechCraft: A Fine-grained Expressive Speech Dataset with Natural Language Description*. Accepted by the 32st ACM International Conference on Multimedia (**MM '24**). Association for Computing Machinery, New York, NY, USA.
- Xiaohan Li, **Qixin Wang**, Zishan Wang, Zeyu Jin, and Jia Jia. 2024. *SoulSkipper: A Voice-Controlled Emotional Adaptive Game to Complement Therapy for Social Anxiety Disorder*. In Extended Abstracts of the 2024 CHI Conference on Human Factors in Computing Systems (**CHI EA '24**). Association for Computing Machinery, New York, NY, USA, Article 298, 1–7. <https://doi.org/10.1145/3613905.3650822>
- Zeyu Jin, Zixuan Wang, **Qixin Wang**, Jia Jia, Ye Bai, Yi Zhao, Hao Li, and Xiaorui Wang. 2023. *HoloSinger: Semantics and Music Driven Motion Generation with Octahedral Holographic Projection*. In Proceedings of the 31st ACM International Conference on Multimedia (**MM '23**). Association for Computing Machinery, New York, NY, USA, 9393–9395. <https://doi.org/10.1145/3581783.3612674>
- Jiao, Y., **Wang, Q.**, Xu, Y. (2023). Graphical Tactile Display Application: Design of Digital Braille Textbook and Initial Findings. In: Wang, D., *et al.* Haptic Interaction. **AsiaHaptics 2022**. Lecture Notes in Computer Science, vol 14063. Springer, Cham. [https://doi.org/10.1007/978-3-031-46839-1\\_10](https://doi.org/10.1007/978-3-031-46839-1_10)
- Yang Jiao, **Qixin Wang**, Yingqing Xu. *Research on Haptic Graphic Displays: Digitized Braille Textbook Design*. Poster presented at the track of the CHCI in the 18th Conference of Harmonious Human-Machine Environment Meeting (**HHME-CHCI 2022**). China computer federation, Beijing, China.
- **Qixin Wang**, Chong Cao, Jiayi Sun. *The discussion on the method about using interactive installation art in psychotherapy*. Oral presented at the Meeting of the 5th Art and Science International Exhibition and Symposium (**TASIES 2019**). Tsinghua University, Beijing, China

## RESEARCH EXPERIENCE IN HCC AND HCI

### 1. Assistive Technology and Multi-modal Interaction

#### 1.1 Video-R: An Accessible Video Viewing System for BLVs based on Multimodal Interaction

Advisors: **Prof. Jia Jia** (Institute of HCI and Media Integration, Tsinghua University)

May. 2024 – Present

- Introduction: An AI Agent enabling BLV users to easily upload videos and receive versions with audio descriptions, enhancing accessibility and enriching their online viewing experience through user-centric and multimodal interaction
- Contribution: Conducted literature review and analysis, collected and processed data, system design
- Paper currently in progressing

#### 1.2 Computer for the Blind - Research on a Graphical Tactile Display and Application Design

Advisors: **Dr. Yang Jiao** and **Prof. Yingqing Xu** (The Future Laboratory, Tsinghua University)

Apr. 2021 - Jun. 2022

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- Introduction: A tactile display for BLV users, allowing them to access both text and graphic information through a dynamic dot matrix interface, significantly enhancing educational and public accessibility in schools, libraries, museums, and other spaces
- Contribution: Led literature research, mechanical structure improvement, test program development, and prototype assembly. Managed communication with processors and contributed to paper writing
- Paper1 accepted by the 4th AsiaHaptics Conference (**AsiaHaptics 2022**); Paper2 accepted by the CHCI of 18th Harmonious Human-Machine Environment Meeting (**HHME-CHCI 2022**)

## 2. Multi-modal Speech Synthesis and Affective Computing

### 2.1 Research on the Influence of Emotion-Intention-TTS in Social Communication

Advisors: **Dr. Xiaoyu Qin** and **Prof. Jia Jia** (Institute of HCI and Media Integration, Tsinghua University)  
Aug. 2024 – Present

- Introduction: Research about how emotional synthesis in text-to-speech (TTS) impacts the effectiveness of social communication, aiming to explore the critical role of emotion in enhancing the clarity of conveyed messages
- Contribution: Conducted literature review and analysis, collected and processed data
- Paper currently in progressing

### 2.2 Research on Emotional Speech Synthesis via Visual Context Perception

Advisors: **Dr. Xiaoyu Qin** and **Prof. Jia Jia** (Institute of HCI and Media Integration, Tsinghua University)  
Mar. 2024 – Aug.2024

- Introduction: A study investigating the impact of visual context information on the accuracy and enhancement of emotional speech synthesis, exploring how visual information especially in background can improve the emotional expressiveness of synthesized speech
- Contribution: Conducted literature review, data preparation, user experiments, and visual content creation
- Paper oral presented at the National Conference on Man-Machine Speech Communication (**NCMMSC2024**)

### 2.3 SpeechCraft: Fine-grained Expressive Speech Dataset with Natural Language Description

Advisors: **Dr. Xiaoyu Qin** and **Prof. Jia Jia** (Institute of HCI and Media Integration, Tsinghua University)  
Aug. 2023 – Apr.2024

- Introduction: A large-scale expressive bilingual speech dataset with natural language descriptions resulting from an automatic speech annotation system. It encompasses over 2,000,000 audio clips annotated with two versions of text prompts, called speech-Descriptions (exclude transcript) and speech-Instructions (include transcript)
- Contribution: Executed data cleaning, automated labeling programming, dataset arrangement, user experiments, partial article writing, and visual content creation
- Paper accepted by the 32st ACM International Conference on Multimedia (**MM'24**); Dataset being prepared for open source

## 3. Artistic Psychological Intervene

### 3.1 Soul Skipper: A Voice-Controlled Emotional Adaptive Game for Social Anxiety Disorder Therapy

Advisors: **Prof. Jia Jia** (Institute of HCI and Media Integration, Tsinghua University)  
Oct. 2023 - Feb. 2024

- Introduction: A voice-controlled game that complements CBT for social anxiety, helping players practice social interactions and manage anxiety through tailored scenarios and real-time voice feedback
- Contribution: Designed game interactions, conducted user experiments, created visual content, and produced the prototype and demo
- Paper accepted by the Extended Abstracts of the 2024 CHI Conference on Human Factors in Computing Systems (**CHI EA'24**)

### 3.2 Research on the method about using interactive installation art in psychotherapy

Advisors: **Prof. Chong Cao** (Institute of New Media Art and Design, Beihang University)  
Jun. 2019 - Nov. 2019

- Introduction: A study exploring how interactive installation art can be integrated into psychotherapy, analyzing its form and interactive features to assess its potential benefits in the therapeutic process
- Contribution: Conducted literature review, theoretical analysis, and authored the research paper
- Paper oral presented at the 5th Art and Science International Exhibition and Symposium (**TASIES 2019**)

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## ACADEMIC PROJECT IN ASSISTIVE TECHNOLOGY AND MULTI-MODAL INTERACTION

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### SuperCard Meet Dali: A Digital Immersive Environment Interaction System about China Cultural and Tourism Promotion on WeChat Mini Program

Advisors: **Dr. Jiajia Tan** and **Prof. Xiaobo Lu** (Institute of Applied Arts and Sciences, Tsinghua University)

Sept. 2023 - Dec. 2023

\*In cooperation with the New Media Department of *People's Daily*.

- Introduction: The program allows users to explore the natural and urban landscapes of Dali in an immersive 3D environment, simulating a travel experience and using games and rewards to attract real visitors to the city
- Project exhibited on WeChat Mini Program “SuperCard-Meet Dali”

### Group of Brain Painting Institute - Research of Interactive Design for Brain Painting Community

Advisors: **Dr. Yunbing Chen** and **Prof. Yingqing Xu** (The Future Laboratory, Tsinghua University)

Aug. 2022 - Nov. 2022

- Introduction: A project focused on visualizing abstract art from REM sleep brainwave data, utilizing EEG data mapping with visualized elements to create a tool for stress relief, cognitive enhancement, health management, and sleep monitoring
- Works exhibit in **Asia Digital Art Exhibition 2022** (Sep.–Nov. 2022), and **Taobao Maker Festival 2022** (Aug.2022)

### See, smell, and touch the music: A Multi-Modal Interactive Room for Hearing-Impaired Individuals

Advisors: **Prof. Adona Jia** and **Prof. Danqing Shi** (The Future Laboratory, Tsinghua University)

Apr. 2022 - Jun. 2022

- Introduction: This music room allows hearing-impaired users to interact with visual graphics, scents, and tactile objects, all mapped to the rhythm and melody, thus they can experience the emotions in music

### Freely Growing: An Interactive Installation Art Exploring Stereotyped and Limitations on female

Advisors: **Prof. Chong Cao** (Beihang University)

Jan. 2021 - Jun. 2021

- Introduction: An interactive installation where adding stereotype-labeled puzzle pieces restricts the growth of a visual tree, symbolizing how stereotypes limit women’s potential, encouraging reflection on societal biases

## EXTRACURRICULAR ACTIVITY & INTEREST

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- Internship of News Center, Party Committee publicity Department, Tsinghua University Jun. 2023 - Present
- Member of Technical Service Team, Tsinghua University Mar. 2018 - Jun. 2023

## GRANTS & FELLOWSHIP & AWARDS

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|---|----------------------------|
| • Second-Class Scholarship of Tsinghua University   | Awarded Fall Semester 2023 |
| • Best Paper Award-Finalist in Asia Haptics 2022  | Nov. 2022                  |
| • Best Paper Award-Finalist in HHME-CHCI 2022   | Sept. 2022                 |
| • Outstanding Graduate Awards of Beihang University   | Awarded Jun. 2021          |
| • Second-Class Scholarship of Beihang University  | Awarded Fall Semester 2018 |
| • Excellent Paper Presentation in the 4 <sup>th</sup> HEED International Collegiate Conference of China | May.2018                   |

## SKILLS & HIGHLIGHTS

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**Language:** Mandarin, English, Japanese, Korean

**Programming:** Python, C#, P5.js, Html5&CSS3

**Design skills:** Graphic design, Web design, IxD, UI design, UX research and design, Interactive Art, VR&AR

**Software-Graphic & Web & UI Design:** Photoshop, Illustrator, InDesign, Premiere, Figma, Framer,

**Software-Interactive Art & VR& AR Dev:** Unity, Arduino, Processing, Touch Designer

**AIGC:** ChatGPT, Midjourney, Stable Diffusion, HeyGen