

# CV | SUN, Tongxin

Name: Tongxin Sun Age: 27 Gender: Female Citizenship: Chinese

Current address: Zijing Apartment.18, Tsinghua University, Haidian District, Beijing 100084, P. R. China

I am currently a *second-year Ph.D. student* advised by *Professor Jeung Jihong* in the Research Center for Aging User Experience and Service System Design (AeX), the Future Laboratory, Tsinghua University.

I am a *researcher, multimedia designer, and creative technologist*, dedicated to supporting and empowering social engagement of older adults through accessible and inclusive technology design.



## EDUCATION

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Sept 2022 - Present

### Ph.D., Information Art and Design

Research Center for Aging User Experience and Service System Design (AeX),

The Future Laboratory, Tsinghua University | Beijing, China

Academy of Arts & Design, Tsinghua University | Beijing, China

- *Ph.D. Committees: Prof. Jeung Jihong, Prof. Xu Yingqing, Prof. Tang Keyang, Prof. Le Huirong, Prof. Mi Haipeng, Prof. Wu Qiong*

Sept 2017 - Apr 2020

### M.F.A., Media Design Practice / STEM

ArtCenter College of Design | Pasadena, CA

- *Advisors: Elizabeth Chin, Elise Co, Tim Durfee, Ben Hooker, Maggie Hendrie, Jenny Rodenhouse, Sean Donahue, Sam Creely*
- *Funded by full scholarship of the Art Talent Training Special Project*
- *Awarded with ACCD MDP Thesis Scholarship & Department Scholarship*

Sept 2013 - June 2017

### B.E., Chemical Engineering and Technology

Dalian University of Technology | Liaoning, China

- *Minister of the Science and Innovation Department, the Student Council*

## PROFESSIONAL EXPERIENCES

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May 2021 - Aug 2022

### Research Assistant, The Future Laboratory, Tsinghua University | Beijing, China

Worked as an executive leader and key personnel on national funding applications and collaborative projects for aging research with international organizations and companies. Organized participatory design workshops, usability studies, and academic seminars, and presented findings through deliverables such as white papers, multimedia presentations, and exhibitions.

- *Mentored by Prof. Jeung Jihong*

Jan 2021 - Present

### Co-director, New New Studio | Beijing & Shanghai, China; Los Angeles, CA

Managed the creative design studio specializing in interactive installations, multimedia art, and AR, VR, and MR applications for commercial exhibitions.

- *Clients include Alibaba, Mercedes-Benz, DIOR, DiDi Chuxing, WallpaperSTORE, etc.*

Jun 2020 - May 2021

**Lecturer, ACCD Hub / EXR International Art Center / Tangsz Academy** | Beijing, China  
Conducting Art+Tech workshops to instruct high school and undergraduate students on AR/VR technology, creative coding, interaction design, and related topics.

Nov 2019 - Jan 2020

**Artist Assistant, Artist Tiffany Trenda** | Los Angeles, CA  
Assisted the artist in developing XR programs for embodied interactive installations.

May 2019 - Aug 2019

**Research Assistant, Artist Jen Liu & LACMA's Art+Technology Lab** | Los Angeles, CA  
Assisted the artist in researching, planning, and fabricating sculptural components for the Pink Slime Caesar Shift project, which incorporates genetic engineering and labor activism into a narrative.

July 2018 - Oct 2018

**Designer, Wonder Science TV** | Los Angeles, CA  
Worked on the brand design, motion graphics, and UX/UI design for microscopic science visuals.

## P U B L I C A T I O N S

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### Journal Articles -

#### **J6 Restoring Dunhuang Murals: Crafting Cultural Heritage Preservation Knowledge into Immersive Virtual Reality Experience Design**

Tongxin Sun, Tongtong Jin, Yuru Huang, Meng Li, Yun Wang, Zhe Jia, and Xinyi Fu  
*International Journal of Human-Computer Interaction*. 2023: 1-22. [SSCI & SCIE]

#### **J5 A Review of the Frontier Research on Future Smart Home**

面向未来的智能家居前沿研究

Xinyi Fu, He Zhang, Cheng Xue, Tongxin Sun  
*Science & Technology Review*. 2023;41(8):36-52. [Chinese Core Journal]

#### **J4 Interaction Design of Fall Detection Camera in Smart Home Care Scenario**

智能家居养老场景下跌倒检测摄像头的交互设计

Weiwei Zhang, Tongtong Jin, Tongxin Sun, Yuru Huang, Xun Gao, and Jeung Jihong  
*Journal of Computer-Aided Design & Computer Graphics*. 2023(3). [EI] [Chinese Core Journal]

#### **J3 Research on the Recruitment Methods of "Recruiting Older Users": A Case Study about Exploring How to Recruit Older Users in Beijing to Participate in Product Design Research**

“招募老年用户”的招募方法研究—以探寻如何招募北京地区老年用户参与产品设计调研为例

Yuanyuan Liu, Tongxin Sun, and Jeung Jihong  
*Zhuangshi*. 2022(11):76-81. [CSSCI] [Chinese Core Journal of Design]

#### **J2 Research on Precise Smart Service Design for Aging in Place Situation**

面向居家养老人群的精细化智能服务设计研究

Jiabei Jiang, Tongxin Sun, and Jeung Jihong  
*Zhuangshi*. 2022(05):40-45. [CSSCI] [Chinese Core Journal of Design]

## **J1 Highly selective and sensitive detection of metal ions and nitroaromatic compounds by an anionic europium (III) coordination polymer**

Bogale, Raji Feyisa, Junwei Ye, Yuan Sun, Tongxin Sun, Siqi Zhang, Abdul Rauf, Cheng Hang, Peng Tian, and Guiling Ning

*Dalton Transactions*. 2016;45(27):11137-44. [SCIE]

### **Conference Articles -**

## **C2 Mobile Screen-based User Interface Design Guideline for Panoramic VR in Shopping Scene**

Xinyi Wang, Cheng Xue, Tongxin Sun, Jingyi Liu, and Xinyi Fu

*In Proceedings of the 23rd International Conference on Mobile Human-Computer Interaction*.

## **C1 Research on Touchpoints in Participatory Design Research Activity with Older Adults**

Jiabei Jiang, Tongxin Sun, and Jeung Jihong

*In Proceedings of the 2021 Annual Conference of Human Computer Interaction (KHCI '21)*.

### **Ongoing Papers -**

## **"It's a Snap!" : Investigating Chinese Older Adults' Technology Adoption Transition Using Smartphone Cameras during COVID-19 and beyond (submitted)**

Tongxin Sun, Weiwei Zhang, Tongtong Jin, and Jiangtao Gong

## **Treat Participatory Design Activity as Service: An AIC Touchpoint Toolkit to Actively Engage Chinese Older Adults in Research (submitted)**

Jiabei Jiang, Tongxin Sun, Jianing Yin, and Yuanyuan Liu

## **A Comparative Study on Cross-Cultural Differences in the Recruiting and Engaging Older Adults in Design Research Activities: Insights from the UK and China (WIP)**

Tongxin Sun, Yuanyuan Liu, Jiabei Jiang, Jeung Jihong, Xueying Xiong, Juncheng Wen, and Lynne Corner

## **"I Hope It Won't Offend Me": A Study of Older Adults' Attitudes Toward Home Cameras (WIP)**

Weiwei Zhang, Jianing Yin, Ka I Chan, Tongxin Sun, Tongtong Jin, Yuru Huang, and Jiangtao Gong

# **P R O J E C T S**

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### **Selected Research Projects -**

Oct 2021 - Present

#### **Senior Citizen Engagement**

**Key personnel & project executive leader** | PI: Jeung Jihong

*Subproject under the UK-China Healthy Aging Project; funded by UK National Innovation Centre for Ageing*

Conducted research to examine senior citizen engagement in China and UK cultural contexts, identifying effective approaches to recruit Chinese senior citizens in design research, and exploring accessible online research tools through participatory design workshops to enhance their engagement in online research activities to facilitate long-term knowledge contribution. Examined and compared cross-cultural differences in recruiting and engaging older adults in design research activities in the UK and China, providing insights from the field for researchers and practitioners. Methods included interviews, multi-stakeholder focus groups, participatory design workshops and usability tests.

Sep 2022 - Present

### **The Situation, Difficulties and Solutions of Intelligent Travel for Older Adults**

*Supported by China Association of Gerontology and Geriatrics & DiDi Chuxing*

Investigated the digital divide among older adults regarding transportation accessibility through smart travel applications using surveys, interviews, and comparative analysis.

Jul 2022 - Dec 2022

### **Research on VR-based Interaction Design of Dunhuang Murals Digital Restoration Experience**

**Project leader** | Advised by Xinyi fu

*Supported by the National Key Research and Development Program*

Developed a multimodal interactive virtual reality system for the digital restoration experience of Dunhuang murals to enhance embodied knowledge and promote cultural value to the public. Conducted interviews, comparative studies, and usability tests to evaluate the system's effectiveness.

Sep 2021 - Jun 2022

### **Designing for Dignity: A Study of Smart Home Care Camera Design for Older Adults**

**Key personnel & project executive co-leader** | PI: Jeung Jihong

*Collaborated with and funded by Tencent Company & Co-published the Blue Book for Aging Technology*

Investigated older adults' privacy concerns and potential conflicts of values towards smart home care cameras in multi-person households and examined prototype design through interviews and scenario-based participatory design workshops.

Jun 2021 - Present

### **Developing User-centered Smart Home Scenarios for Aging in Place**

**Key personnel** | Advised by Jeung Jihong, Xinyi fu

*Subproject under Research on Theory and Method of Multimodal Fusion Perception based Intelligent Interaction*

Conducted a survey and participatory design workshop to investigate the acceptance and adoption of smart home products and services among older adults. Employed diary study and participatory design methods to explore older adults' perception of identity, roles, and relationships with voice assistants.

## **Selected Design Projects -**

Oct 2022-Nov 2022

### **WanXiang "Panorama"** | Plant-driven Interactive Installation

*Designed for Mercedes-Benz & Exhibited on the Fifth Annual International Style Conference in Amoy, Fujian*

Designed an interactive installation transforming resistance signal of localized plants into real-time audio and visual languages using Arduino IDE, Max for Live, and TouchDesigner.

Sept 2019 - Apr 2020

### **Uncommon Engagements and UbiComp Divinations** | Graduate Thesis

*Exhibited in W-I-P Show, MDP Wind Tunnel Gallery*

Deployed speculative prosthetics to extend body performance and embrace the connectivity to machine vision in ubiquitous censoring environment through generative arts and body tracking technology.

Sept 2018 - Dec 2018

### **Mundane AIoT** | Social Robot Prototype

Designed and developed a social robot as a smart home device to generate trendy contents of hybrid aesthetics for sharing.

Nov 2018 - Jan 2019

**Live Kino-Eye: Slow Jam** | collaborative live performance

*Performed in Wobbly Realities Livestream publication*

Streamed real-time body tracking data within a Perception Neuron suit to perform the avatar interacting with virtual reality scenarios controlled by the online audience.

## HOSTING ACTIVITIES

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Mar 17th -18th 2023

**Lead Organizer, “Sunset in the Hope” 2023 Annual Workshop** | The Future Laboratory, Tsinghua University, Beijing, China

- *S01: <Design for Aging> Design for Well-Being: Digital Technology Support the Lives of Older Adults*
- *S02: <Research for Aging>*
- *S03: <Design for Aging> Design Research Methods for Aging-Friendly Technology*
- *S04: <Voice for Aging> International Workshop - Funded through the UK Research and Innovation (UKRI) Fund for International Collaboration (FIC)*

Jul 2022 - Nov 2022

**Lead Organizer, Serial Seminars: A Conversation with Interdisciplinary Researchers on Aging** | The Future Laboratory, Tsinghua University, Beijing, China

- *S01: The Aging Digital Age: New Technologies and the Digital Divide*
- *S02: "Face to face" with Older Adults: Methods & Communication Approaches*
- *S03: The Future Intelligent Spatial Design for the Aging Population*
- *S04: Digital Empowerment: Older Adults and “the Sea of Information”*

Dec 4th 2022

**Key personnel & Designer, Design for Active Aging: Living Better Together** | The Future Laboratory, Tsinghua University, Beijing, China

## SKILLS

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### HCI Research

*Qualitative & Quantitative research, Human-Centered Computing, Inclusive Design, Interaction Design, Service Design, Participatory Design, Accessibility, Socio-Technical System, Speculative Design, Immersive Virtual Environment, Physical Computing, Virtual Communities, Multi-Modal Interaction, Social Engagement, Lifelong Learning, Healthcare and Wellbeing*

### Other Fields

*Multimedia Art, Visual Design, Motion Graphics and Animation, Exhibition Curation, Generative Art, Body Tracking, Live Performance, Rapid Prototype, Design Fiction*

### Tools

*Unity, Unreal Engine, Adobe Creative Suite (Ps, Ai, Ae, Pr, InD), Figma, Sketch, Maya, Rhino, Zbrush, Programming (Python, C#, Java, CSS), Supercollider, Runway ML, Ubuntu Linux, Anaconda, Arduino, Raspberry Pi, Touchdesigner*