

# JINGZE TIAN

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## EDUCATION

### Master of Design

Anticipated Completion: June. 2024

Department of Industrial Design, Southeast University

### Bachelor of Mechanical Engineering

Sept. 2017 – June. 2021

School of Mechanical Engineering, Southeast University, Nanjing, China

## PROFESSIONAL EXPERIENCE

### Computational Media and Arts Thrust, The Hong Kong University of Science and Technology (Guangzhou)

Internship, Research Assistant, Project Leader

June. 2023 – Sept. 2023

- With the instruction of Asst. Prof. Mingming Fan, as the leader of the project, succeeded in conducting a user study to improve VR accessibility for people with motor impairment, specifically those with Spinal Muscular Atrophy, using participatory design.
- As the first author, my paper: *Designing Gaze-Assisted Upper-Body Gesture Interaction with and for People with Spinal Muscular Atrophy in VR* has submitted to CHI'24

### Institute for Network Sciences and Cyberspace, Tsinghua University

Internship, Remote Research Assistant

May. 2023 – Present

- With the instruction of Asst. Prof. Xin Yi, collaborated with a PhD student to explore human factors research in mixed reality environments created through passthrough mode via literature review, analysis, and discussions.
- Independently proposed a research idea: *Expanding Interactive Space in Mixed Reality Through Fusion of Physical and Virtual Environments*

## THESIS & PAPERS

- Niu, Y., Tian, J., Han, Z., Qu, M., Tong, M., Yang, W., & Xue, C. (2022). Enhancing User Experience of Eye-Controlled Systems: Design Recommendations on the Optimal Size, Distance and Shape of Interactive Components from the Perspective of Peripheral Vision. *International Journal of Environmental Research and Public Health*, 19(17), 10737. (Q1, IF=4.614, supervisor as 1st author)
  - Main Work:** Conducted an ergonomic experiment to analyze the impact of three factors: size, position, and metaphor of interaction elements in peripheral vision on the performance of gaze gestures.
- Tong, M., Chen, S., Niu, Y., Wu, J., Tian, J., & Xue, C. (2022). Visual search during dynamic displays: Effects of velocity and motion direction. *Journal of the Society for Information Display*, 30(8), 635–647. (Q3, IF=2.2)
  - Main Work:** Studied how motion direction and velocity impact visual search in dynamic environments using two experiments.
- Zuo, H. R., Niu, Y. F., Tian, J. Z., Yang, W. J., & Xue, C. Q. (2023). Study on the brightness and graphical display object directions of the Single-Gaze-Gesture user interface. *Displays*, 80, 102537. (Q1, IF=4.3)
  - Main Work:** Explored design recommendations for gaze gesture interfaces, considering background brightness, brightness contrast, target brightness, and GDO placement to enhance interaction performance and user experience.
- Li, Z., Zhou, Z., Wang, Y., Tian, J., Yang, W., & Niu, Y. (2023). Enhancement Characteristics of Visual Stimulus Elements in SSVEP-BCI System. *Intelligent Human Systems Integration (IHSI 2023): Integrating People and Intelligent Systems*, 69(69).
  - Main Work:** Explored impact of auxiliary stimulus particle quantity on SSVEP-BCI efficiency and user satisfaction.

- [5] **Master Thesis:** Multimodal Text Interaction based on Eye-tracking Technology.
- **Main Work:** Focused on three issues in the Eye-controlled interaction system: Midas Touch, low spatial precision, fatigue, proposed innovative interaction design methods to enhance eye-based text entry performance and user experience.
- [6] **Bachelor Thesis:** Research on Visual Representation of Interactive Elements for Eye-controlled User Interface
- **Main Work:** Develop an experimental platform using Unity and C#, and recruit 20 participants to conduct an ergonomic experiment through this platform.
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## PATENTS

- [1] Jingze Tian, Yafeng Niu, Yiyang Wang, Jiaxin He, Weichi Huang, Eye-movement password input method, system and device: Chinese Patent. 2023103654660.
- [2] Xiaofan Li, Mengqian Tian, Yaming Wan, Jingze Tian, A portable wearable pneumatic massager: Chinese Patent. 202010514257.4.
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## OTHER PROJECT EXPERIENCE

- VR Development of Lunar base simulation** 2022
- With the instruction of Assoc. Prof. Yafeng Niu, developed a VR simulation platform for lunar base work scenarios using Unity3D (C#) and VR Interaction Framework, suitable for ergonomics experiments.
- User Interface Design, Nanjing Daquan Electric Research Institute** 2021–2022
- Joined a team of engineers, designed the user interface for Daquan Company's industrial park management system using Figma, creating over 30 webpages and delivering to frontend engineers.
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## TEACHING & MENTORING

- Teaching Assistant: Undergraduate Senior Thesis, Southeast University Oct. 2022 – May 2023
- Teaching Assistant: Master Lesson, Neuro-design, Southeast University Sept. 2022 – Feb. 2023
- Teaching Assistant: Undergraduate Lesson, Conceptual design of products, Southeast University Sept. 2022 – Feb. 2023
- Invited Lecturer, Proceedings of the Symposium on Design Ergonomics, Zhejiang Province
- Visual Representation of Interface Elements based on Gaze Gesture Interaction* Sept. 2022
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## HONORS & AWARDS

- Wang Yanqing Scholarship, Lead Intelligence ( 8000RMB, Top 10% by grade ) 2022
  - Outstanding Award, Metallographic Competition, Southeast University 2018
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## SKILLS & COMPETENCIES

- **Research:** Conducting user studies, designing experiments, statistical analysis (SPSS, Minitab), and extensive experience in writing papers.
- **Development:** Proficiency in programming languages (C#, Python, Matlab, HTML/CSS/Javascript). Proficient in Unity and UE4 (Blueprint). Quick prototyping and experiment platform establishment. Familiarity with the APIs of eye-tracking (Tobii) and XR devices (Oculus Quest 2, Hololens 2, Varjo).
- **Design:** Skilled in Design Thinking and the Double Diamond model, covering UI/UX, product, and graphic design. Proficient in Figma, Adobe Illustrator, Blender, Rhino, Keyshot, and SolidWorks for graphic and 3D design.
- **Proficient in English:** IELTS 6.5(6.0), CET 4/6.