Hongbo 'Alex' ZHANG

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HCI

▮ EDUCATION

Zhejiang University | College of Computer Science and Technology | **Ph.D.** Candidate of Design Science   Mar 2023-Jun 2025

Zhejiang University | College of Computer Science and Technology | **MD** of Design Science   Sep 2020-Mar 2023

North China Electric Power University | College of Mechanical Engineering | **BD** of Industrial Design   Sep 2016-Jun 2020

▮ RESEARCH INTEREST

Intuitive Human-computer Interaction

I explore natural and direct interaction modes, including gesture interaction, embodied interaction, and XR interaction. Aiming to improve the user experience, efficiency, and intuition through interaction mode innovation.

Interactive Human-AI Co-creation

I explore the mechanism of Human-AI communication and cooperation. I focus on user-centered interacive AI system, investigating the role, cooperation mode, and contribution type of AI agent in co-creation process.

Embodied & Generative System

I also focus on the combination of the two aforementioned directions. I integrate intuitive interaction with GenAI in creative work for efficiency enhancement and creativity support, such as "AR + GenAI" and "TUI + GenAI".

▮ PUBLICATION

Hongbo Zhang, Pei Chen*, Xuelong Xie, Zhaoqu Jiang, Zihong Zhou, and Lingyun Sun. "A Hybrid Prototype Method Combining Physical Models and Generative Artificial Intelligence to Support Creativity." *ACM Transaction on Computer Human Interaction*, (2024)

Hongbo Zhang, Pei Chen*, Xuelong Xie, Chaoyi Lin, Lianyan Liu, Zhuoshu Li, Weitao You, and Lingyun Sun. "ProtoDreamer: A Mixed-prototype Tool Combining Physical Model and Generative AI to Support Conceptual Design." *ACM Symposium on User Interface Software and Technology*, (2024)

Sun, Lingyun, **Hongbo Zhang**, Pei Chen*, Zhaoqu Jiang, Xuelong Xie, Zihong Zhou, Xuanhui Liu, and Xiaoyu Chen. "Elicitation and Evaluation of Hand-based Interaction Language for 3D Conceptual Design in Mixed Reality." *International Journal of Human-Computer Studies*, (2024)

Huang, Jinghua, **Hongbo Zhang***, Lujin Mao, Dongliang Zhang, Jianfeng Li, Tiancheng Ji, and Runze Han. "The effect of tablet computer configurations and touchscreen gestures on human biomechanics, performance, and subjective assessment." *International Journal of Human–Computer Interaction*, (2024)

Hongbo Zhang, Pei Chen*, Jingwen Yang, Yifei Wu, Zhaoqu Jiang, Xuelong Xie, Wutao You and Lingyun Sun. "IEDS: Exploring an Intelli-Embodied Design Space combining designer, AR, and GAI to Support Conceptual Design". *International Journal of Human Computer Studies (IJHCS)*, Under Review

Hongbo Zhang, Pei Chen*, Xuelong Xie, Zhaoqu Jiang, Yifei Wu, Zejian Li, Xiaoyu Chen and Lingyun Sun. "FusionProtor: A Mixed-Prototype Tool for Component-level Physical-to-Virtual Transition and Simulation". *ACM CHI Conference on Human Factors in Computing Systems (CHI'25)*, Under Review

Zhuoshu Li, Pei Chen, **Hongbo Zhang***, Yexinrui Wu, Xuanhui Liu & Lingyun Sun. "Painting++: Human-Computer Collaborative Painting in VR with Multisensory Interaction". *Displays*, Under Review

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