Ke Zhou

(+86)18655589619 kzhou854@connect.hkust-gz.edu.cn kezhou1210.github.io

Education

The Hong Kong University of Science and Technology ***Sep 2025 – Present***
Master of Philosophy in Computer Science *Guangzhou, China*
***Research Interest: VR/AR/XR**, Human-Computer Interaction, Computer graphics*

Chongqing University ***Sep 2021 – Jun 2025***
Bachelor of Economics and Business in Finance (GPA: 3.71/4, Rank: 5/39) *Chongqing, China*

Publication

Published (Conferences and Journal)

Handows: A Palm-Based Interactive Multi-Window Management System in Virtual Reality *Project Link*
Jin-Du Wang, **Ke Zhou**, Haoyu Ren, Per Ola Kristensson, Xiang Li
*Accepted by **ISMAR'25 (TVCG Track)** Honorable Mention*

Exploring the Remapping Impact of Spatial Head-hand Relations in Immersive Telesurgery *Project Link*
Tianren Luo, **Ke Zhou**, Pengxiang Wang, Shuting Chang, Gaozhang Chen, Hechuan Zhang, Qi Wang, Teng Han, Feng Tian
*Accepted by **ACM CHI'25***

Under Review

GOATUI: Generating Opportunistic Adaptive Tangible User Interfaces through Function Alignment in Augmented Reality *Project Link*
KeZhou, Jin-Du Wang, Tianren Luo, Linping Yuan, Wai Tong
Under Review

Continuous Measurement Methods for Transient Physiological Discomfort in VR Locomotion *Project Link*
Tianren Luo, Pengxiang Wang, Shuting Chang, **Ke Zhou**, Nianlong Li, Yulong Bian, Xiaohui Tan, Qi Wang, Teng Han, Feng Tian
Under Review

Research Experience

VVAI Lab, Texas A&M University ***Oct 2024 – Sep 2025***
*Research Intern advised by **Prof. Wai Tong*** *College Station, Texas/Remote*

- ***User-Edge-Cloud AR System for VLM-Driven Opportunistic Tangible UI Generation.***
  - Conducted a formative study with 8 participants to identify key barriers in utilizing daily objects for interaction, synthesizing three design requirements for automated Tangible UI generation.
  - Designed and implemented GOATUI, a vision-based perception AR system integrating edge-deployed Lang-SAM (VLM + GroundingDINO + SAM2) for open-vocabulary segmentation, a depth reprojection algorithm to generate 3D interaction realms for gesture recognition and cloud-based VLMs for object-interaction inference.
  - Conducted a comparative user study involving 12 participants against manual and surface-based baselines, demonstrating that GOATUI significantly improved interaction expressiveness and user willingness while reducing mental load.

HCI Lab, Institute of Software, Chinese Academy of Sciences ***June 2024 – Sep 2024***
Research Intern advised by ***Prof. Teng Han*** *Beijing, China*

- ***Immersive Telesurgery System for Assessing Remapping Effects in VR Teleoperation.***
  - Investigated visual-proprioceptive conflicts arising from discrete spatial remapping during camera adjustments and robotic arm switching, identifying key sensory conflict variables in telesurgical environments.
  - Simulated a high-fidelity immersive telesurgery system in Unity, modeling 18 specific remapping situations across varying offsets and deflections to isolate their impact on surgical precision.
  - Conducted a user study involving 20 participants measuring trajectory deviation and workload, revealing that head-camera deflection induces the most severe spatial perception bias while hand-arm offset causes the highest physical load.
- ***Optimized Discomfort Measurement Methods for VR Locomotion.***
  - Supported a user-elicitation study with 24 participants to generate 216 measurement methods, identifying intuitive gestures for reporting real-time motion sickness without breaking immersion.
  - Contributed to the system implementation by developing the VR locomotion scenarios in Unity and integrating the motion capture pipeline using Qualysis for gesture recognition.
  - Facilitated a user study involving 18 participants demonstrating that the proposed method achieved high reliability and minimal cognitive load, providing a validated tool for VR comfort assessment.

Chongqing University ***Feb 2024 – May 2024***
Research Intern advised by ***Dr. Xiang Li from University of Cambridge*** *Remote*

- ***Immersive Windows Management System in VR/AR.***
  - Identified the physical fatigue and lack of haptics in existing VR window management, and proposed a palm-based interface strategy leveraging proprioception and mobile-inspired gestures.
  - Designed and implemented the Handows system in Unity with Meta Interaction SDK, optimizing spatial layout based on ergonomic angular comfort zones to support selection, closure, positioning, and scaling tasks while providing haptic feedback.
  - Conducted a controlled user study ($N = 15$) and a case study ($N = 8$), results showed Handows reduced head rotation by over 60% and achieved superior scaling precision (1.39% deviation) compared to controller-based baselines.

Awards and Honors

HKUST Postgraduate Scholarship ***2025-2027***
Chongqing University Comprehensive Excellence Award ***2022-2024***
Second Prize in The Chinese Mathematics Competition ***2023***
Third Prize in National English Competition for College Students ***2022***
Chongqing University Outstanding Student ***2022***

Academic Activities

Oral Presentation at ***CHI 2025*** Yokohama, Japan
Oral Presentation at ***ISMAR 2025*** Daejeon, South Korea

Skills

Technical Proficiency: Python, Java, C++, C#, Web(Javascript, HTML, CSS), LaTeX, Unity3D (XR Dev)
HCI Research Design: User Study Design, Prototyping, Qualitative & Quantitative Data Analysis
Language: Chinese (Native Proficiency), English (Professional Working Proficiency, TOEFL: 104 (R:29, L:27, S:23, W:25))