Lixiang Zhao

Department of Computing
School of Advanced Technology
Xi'an Jiaotong-Liverpool University
Suzhou, China

Email: Lixiang.Zhao17@student.xjtlu.edu.cn
Github: https://github.com/LixiangZhao98
ORCID: 0000-0001-6181-1673

SUMMARY

My research focuses on Human-Computer Interaction (HCI) and Scientific Visualization (SciVis). My work is dedicated to design and evaluate the spatial interaction techniques and visualization techniques tailored to specific scientific domains, such as fields of astronomy, biology, medicine etc.. within Virtual Reality (VR), Augmented Reality (AR), Mixed Reality (MR), and Cross-Reality (CR) environments. I am particularly interested in investigating the domain experts' needs and develop efficient interaction and visualization techniques to enhance their ability to comprehend and explore scientific data.

EDUCATION BACKGROUND

University of Liverpool (UoL), United Kingdom 12/2021 – present
Ph.D. in Computer Science (Off-Site PhD Programme at Xi'an Jiaotong-Liverpool University)
Supervisors: Lingyun Yu, Hai-Ning Liang, Yue Li and Floriana Grasso

Xi'an Jiaotong-Liverpool University (XJTLU), China 09/2017 – 07/2019
University of Liverpool (UoL), United Kingdom
BEng in Telecommunication Engineering | First Class (Honours)

PUBLICATIONS

Peer-reviewed Articles

[1] (**SCI Q1, CCF A**) **L. Zhao**, T. Isenberg, F. Xie, H.-N. Liang and L. Yu, "MeTACAST: Target- and Context-Aware Spatial Selection in VR," in IEEE Transactions on Visualization and Computer Graphics, vol. 30, no. 1, pp. 480-494, Jan. 2024, doi:10.1109/TVCG.2023.3326517.

[2] (**CCF A**) H. Yao, **L. Zhao**, H.-N. Liang, Y. Liu, Y.Li and L. Yu, "Exploring Embodied Asymmetric Two-Handed Interactions for Immersive Data Exploration" In CHI Conference on Human Factors in Computing Systems Extended Abstracts, 2024. To appear.

[3] (**CCF B**) J. Li, **L. Zhao**, H.-N. Liang and L. Yu, "ImmerView: Adaptive Multi-View Layout for Immersive Situated Visualizations," 2023 IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct), Sydney, Australia, 2023, pp. 108-112, doi: 10.1109/ISMAR-Adjunct60411.2023.00030.

[4] (**CCF B**) **L. Zhao**, N. Cao, S. He, H. -N. Liang and L. Yu, "L-WiM: Collaborative Exploration in Immersive Environments," 2022 IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct), Singapore, Singapore, 2022, pp. 118-123, doi: 10.1109/ISMAR-Adjunct57072.2022.00031.

[5] J. Zhang, M. Huang, **L. Zhao**, R. Yang, H.-N. Liang, J. Han, L. Wang and W. Sun., "Influence of Hand Representation Design on Presence and Embodiment in Virtual Environment," 2020 13th International Symposium on Computational Intelligence and Design (ISCID), Hangzhou, China, 2020, pp. 364-367, doi: 10.1109/ISCID51228.2020.00088.

Peer-reviewed Posters

[6] R. Zhou, F. Xie, Z. Yuan, **L. Zhao**, and L. Yu., "Selection, Annotation and Navigation for 3D Geological Data through Hybrid Interactions," China Visualization and Visual Analytics Conference (ChinaVis), XiNing, China, 2022

[7] F. Xie, **L. Zhao**, N. Cao, S. He, and L. Yu. "L-WiM: Collaborative Exploration in Immersive Environments", In: 2023 China Visualization and Visual Analytics Conference (ChinaVis). Best Poster Award, 2023.

AWARDS AND HONORS

[1] **Best Oral Presentation Award** The First Wisdom Lake Postgraduate Researcher Development Conference & 2023 XJTLU Postgraduate Research Symposium. 2023

[2] **Best Poster Award** ChinaVis2023 Poster, topic: L-WiM:Collaborative Exploration in Immersive Environments. 2023

[3] **2nd prizes** ChinaVis2022 Data Visualization Competition, topic: 3D digital twin visualization scene design and construction. 2022

[4] **Excellent Poster Award** 2022 XJTLU Postgraduate Research Symposium. 2022

[5] XJTLU 3rd Undergraduate **Full Scholarship**. 2020

[6] **Honorable Mention** 2019 Mathematical Contest in Modeling (MCM), topic: Send in the Drones: Developing an Aerial Disaster Relief Response System. 2019

[7] **Silver Medal** The 2018 University Physics Competition, topic: Sending a Light Sail Propelled Nanocraft to Alpha Centauri. 2018

CONFERENCE TALKS

[1] (**CCF A**) "MeTACAST: Target- and Context-Aware Spatial Selection in VR", IEEE Visualization & Visual Analytics (**Top conference** in the Visualization field)., Melbourne, Australia, 2023 10/2023

[2] (**CCF A**) **Doctoral Colloquium,** "Spatial selection techniques in the immersive environment", IEEE Visualization & Visual Analytics (IEEE VIS) , Melbourne, Australia, 2023 10/2023

[3] **Invited talk,** "Spatial selection techniques in VR", China Visualization and Visual Analytics Conference, Chongqing (ChinaVis), China, 2023 07/2023

[4] "L-WiM: Collaborative Exploration in Immersive Environments", China Visualization and Visual Analytics Conference (ChinaVis). Best Poster Award, Chongqing, China. 07/2023

[5] (**CCF B**) "ImmerView: Adaptive Multi-View Layout for Immersive Situated Visualizations", IEEE International Symposium on Mixed and Augmented Reality (ISMAR), Sydney, Australia. 10/2023

[6] (**CCF B**) "L-WiM: Collaborative Exploration in Immersive Environments", IEEE International Symposium on Mixed and Augmented Reality (ISMAR), Singapore. 10/2022

[7] "Selection, Annotation and Navigation for 3D Geological Data through Hybrid Interactions", China Visualization and Visual Analytics Conference (ChinaVis), XiNing, China. 07/2022

[8] **Invited talk**, “Experience sharing on University Physics Competition and Mathematical Contest in Modeling”, XJTLU,SB102 10/2019

PROJECT EXPERIENCE

[1] “Natural Interaction Techniques for Immersive Data Visualization”, General Program in National Natural Science Foundation of China (NSFC) (RMB 540,000). Attend. Preparing for the proposal. 01/2023 - 12/2026

[2] “Library Management and Book Retrieval System with Augmented Reality navigation techniques”, Virtual Engineering Center, XJTLU. Collaborated with SenseTime Group Inc. Attend. Front-End and Back-End Developer Computer vision and 3D reconstruction algorithm development. 09/2020 - 06/2023

[3] "Visualization and Interaction Toolkit for Molecular Data in Cross-reality Environment", Collaborated with biologists. Initial prototype has been evaluated. 06/2023 - 12/2025

ACADEMIC ACTIVITIES AND SERVICES

Reviewing for Journals / Conference

- (**CCF A**) IEEE VR — IEEE Virtual Reality and 3D User Interfaces
- (**CCF C**) PacificVis — IEEE Pacific Visualization Symposium
- (**CCF A**) CSCW — Computer Supported Cooperative Work
- **(SCI Q1)** TVCG — IEEE Transactions on Visualization and Computer Graphics

Student Membership

- IEEE student membership.
- CCF student membership.

TEACHING ASSISTANT

CPT405, Postgraduate-Y1, Interactive Systems	2021-24
CPT401, Postgraduate-Y1, Research Methods	2021-23
CPT413, Postgraduate-Y1, Information Visualization	2021-24
CPT412, Postgraduate-Y1, Human-Robot Interaction	2021
CPT204, Undergraduate-Y3, Advanced OO Programming	2024
CPT105, Undergraduate-Y2, Introduction to Programming in Java	2022-23
CPT102, Undergraduate-Y2, Data Structures	2022-23
CPT106, Undergraduate-Y2, C++ Programming and Software Eng. II	2022-23
Professional Development Programme(Coding with python), School of Robotics (Taicang)	2022