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
Webpage: https://lixiangzhao98.github.io
ORCID: 0000-0001-6181-1673

SUMMARY

My research focuses on Human-Computer Interaction and Interactive Scientific Visualization and Computer Graphics. I focus on designing and evaluating spatial interaction and visualization techniques for specific scientific domains (such as astronomy, biology, medicine, etc.) in XR environments to meet experts' needs and boost their data comprehension and exploration.

STUDY EXPERIENCE

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, Yue Li, Floriana Grasso, Hai-Ning Liang and Tobias Isenberg

Xi'an Jiaotong-Liverpool University (XJTLU), China   09/2017 – 07/2021
University of Liverpool (UoL), United Kingdom
BEng in Telecommunication Engineering | First Class (Honours)

PUBLICATIONS

Peer-reviewed Articles

[1] **L. Zhao**, T. Isenberg, F. Xie, H.-N. Liang and L. Yu, "SpatialTouch: Exploring Spatial Data Visualizations in Cross-reality," in IEEE Transactions on Visualization and Computer Graphics, vol. 31, no. 1, pp. 897-907, Oct.2025, doi:10.1109/TVCG.2024.3456368.

[2] W. Xu, **L. Zhao**, H. Song, X. Song, Z. Lu, Y. Liu, M. Chen, E. G. Lim, and L. Yu. "Mozualization: Crafting Music and Visual Representation with Multimodal AI." in CHI Conference on Human Factors in Computing Systems Extended Abstracts, Apr. 2025, To appear.

[3] H Yao, **L Zhao**, B Chen, K Li, HN Liang, L Yu, "3DStoryline: immersive visual storytelling," in Journal of Visualization, vol. 28, no. 2, pp. 463-480, Apr. 2025, doi:10.1007/s12650-025-01058-5.

[4] **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.

[5] 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, issn: 979-8-4007-0331-7, May 2024, doi:10.1145/3613905.365077.

[6] J. Li, **L. Zhao**, H.-N. Liang and L. Yu, "ImmerView: Adaptive Multi-View Layout for Immersive Situated Visualizations," in IEEE International Symposium on Mixed and Augmented Reality Adjunct, issn: 2771-1110, Oct. 2023, doi:10.1109/ISMAR-Adjunct60411.2023.00030.

[7] **L. Zhao**, N. Cao, S. He, H. -N. Liang and L. Yu, "L-WiM: Collaborative Exploration in Immersive Environments," in IEEE International Symposium on Mixed and Augmented Reality Adjunct, issn: 978-1-6654-5365-3, Oct. 2022, doi:10.1109/ISMAR-Adjunct57072.2022.00031.

[8] 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," in International Symposium on Computational   Intelligence and Design, issn: 978-1-7281-8446-3, Jan. 2021, doi: 10.1109/ISCID51228.2020.00088.

Peer-reviewed Posters

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

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

AWARDS AND HONORS

12/2023	**Best Oral Presentation Award.** The First Wisdom Lake Postgraduate Researcher Development Conference& 2023 XJTLU Postgraduate Research Symposium.
07/2023	**Best Poster Award** (at ChinaVis2023) for "L-WiM:Collaborative Exploration in Immersive Environments".
07/2022	**2nd prize** (at ChinaVis 2022 Data Visualization Competition) for "3D digital twin visualization scene design and construction".
12/2022	**Excellent Poster Award.** XJTLU Postgraduate Research Symposium.
12/2021	**XJTLU Doctoral Scholarship.** XJTLU
06/2020	**Full Scholarship.** XJTLU 3rd Undergraduate.
01/2019	**Honorable Mention (**at Mathematical Contest in Modeling 2019**)** for "Send in the Drones: Developing an Aerial Disaster Relief Response System".
11/2018	**Silver Medal (**at The University Physics Competition 2018**)** for "Sending a Light Sail Propelled Nanocraft to Alpha Centauri".

CONFERENCE TALKS

10/2024	"SpatialTouch: Exploring Spatial Data Visualizations in Cross-Reality", IEEE VIS 2024 (**CCF A**), California, United States.
10/2023	"MeTACAST: Target- and Context-Aware Spatial Selection in VR", IEEE VIS 2023 (**CCF A**), Melbourne, Australia.
10/2023	**Doctoral Colloquium**. "Spatial selection techniques in the immersive environment", IEEE VIS 2023 (**CCF A**), Melbourne, Australia.
07/2023	**Academic talk**. "Spatial selection techniques in VR", ChinaVis 2023, Chongqing, China.
10/2023	"ImmerView: Adaptive Multi-View Layout for Immersive Situated Visualizations", ISMAR 2023 (**CCF B**), Sydney, Australia.
10/2022	"L-WiM: Collaborative Exploration in Immersive Environments", ISMAR 2022 (**CCF B**), Singapore.
06/2020	**Invited talk**. "Experience sharing on University Physics Competition/Mathematical Contest in Modeling", XJTLU,SB102

PROJECT EXPERIENCE

01/2023–12/2026	**NSFC General Programme**. Natural Interaction Techniques for Immersive Data Visualization. National Natural Science Foundation of China (Ongoing) (RMB 540,000). Assist to prepare the proposal.
06/2024–06/2025	**State Key Lab Open Project.** Cross-reality Immersive Visualization and Exploration for Scientific Data. State Key Lab of CAD&CG, Zhejiang University. (Ongoing) (RMB 20,000). Assist to prepare the proposal.
03/2025	**NSFC Key Programme**. Large Model-driven Intelligent Visual Analytics and Interaction. National Natural Science Foundation of China (Submitted). Assist to prepare the proposal.
03/2025	**Outstanding Young-Scholar programme** in Jiangsu Science and Technology Programme. Cognitive Enhancement and Intelligent Interaction Techniques in Immersive Environments. (Submitted). Assist to prepare the proposal.
09/2020–06/2023	Collaborated with **SenseTime Group Inc**. Library Management and Book Retrieval System with Augmented Reality navigation techniques. Virtual Engineering Center, XJTLU. Attend and develop front-end and back-end computer vision and 3D reconstruction algorithm.
06/2023–present	Collaborated with **biologists**. Visualization and Interaction Toolkit for Molecular Data in Mixed-reality Environment. Attend and develop visualization and interaction techniques for molecular data in MR. One paper has been published [1].
06/2024–present	Collaborated with **The Fourth Affiliated Hospital of Soochow University** (Suzhou Dushu Lake Hospital). Deep Learning based Intelligent Repositioning Guidance System for Femur Fracture Surgery. Attend.

ACADEMIC ACTIVITIES AND SERVICES

Conference Organization/Programme Committees

10/2024	ISMAR workshop on "2nd Joint Workshop on Cross Reality" (JWCR), **Workshop Co-organizer**.
10/2025	IEEE Visualization & Visual Analytics (VIS 2025), **Poster Programme Committee**.

Student Volunteer

10/2024	IEEE Visualization & Visual Analytics (VIS 2024)
10/2022	International Symposium on Mixed and Augmented Reality (ISAMR 2022)

External Reviewing for Conference

IEEE VR	IEEE Virtual Reality and 3D User Interfaces (**CCF A**)
CSCW	Computer Supported Cooperative Work (**CCF A**)
CHI	CHI Conference on Human Factors in Computing Systems (**CCF A**)
ISMAR	International Symposium on Mixed and Augmented Reality (**CCF B**)
EuroVis	Eurographics Conference on Visualization (**CCF B**)
PacificVis	IEEE Pacific Visualization Symposium (**CCF C**)
ISS	ACM Interactive Surfaces and Spaces

External Reviewing for Journal

TVCG	IEEE Transactions on Visualization and Computer Graphics (**JCR Q1**)
VI	Visual Informatics (**JCR Q3**)
MCB	Molecular & Cellular Biomechanics

SELECTED MENTORSHIP EXPERIENCE

Jiayin Li	Master student	MSc Human-Computer Interaction, XJTLU, published paper on ISMAR 2023 [6].
Haonan Yao	Master student	MSc Human-Computer Interaction, XJTLU, published paper on ISMAR 2024 [5].

TEACHING ASSISTANT

2021-24	CPT405, Interactive Systems, graduate, XJTLU
2024-25	CPT408/CPT306, Game Design, graduate, XJTLU
2021-23	CPT401, Research Methods, graduate, XJTLU
2021-24	CPT413, Information Visualization, graduate, XJTLU
2021-22	CPT412, Human-Robot Interaction, graduate, XJTLU
2024-25	CPT306, Game Design, undergraduate, XJTLU
2024-25	CPT204, Advanced OO Programming, undergraduate, XJTLU
2022-23	CPT105, Introduction to Programming in Java, undergraduate, XJTLU
2022-23	CPT102, Data Structures, undergraduate, XJTLU
2022-23	CPT106, C++ Programming and Software Eng. II, undergraduate, XJTLU
2022-23	Professional Development Programme (Coding with python), undergraduate, XJTLU (Taicang)