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Education

PhD in Computer Science at University of Liverpool	01/2018—05/2021
Thesis: Motion-based Interaction for Head-Mounted Displays	
Supervisor: Prof Hai-Ning Liang, Prof Yong Yue, Dr Bing Wu Berberich	
Examiners: Prof Shengdong Zhao, Dr Lingyun Yu	
MSc Advanced Computing with Management at King's College London	09/2016—09/2017
BSc Computer Science (Games Technology) at Nottingham Trent University	09/2014—07/2016

Experience

Lecturer in HCI	05/2021—now
Birmingham City University, UK	
Doctoral Research Assistant	01/2018—05/2021
Xi'an Jiaotong-Liverpool University, CN	
Graduate Teaching Assistant	01/2018—12/2020
Xi'an Jiaotong-Liverpool University, CN	

Teaching Experience

Lecturer	2021—now
<i>Course:</i>	
▪ DIG4166 Web Design and Development (~200 Y1 students)	2021—22
▪ CMP6214 User Experience Design (~100 Y3 students)	2021
▪ CMP7220 Advanced and Immersive Technologies (~60 Y4 students)	2022
▪ DIG4166 Web Design and Development (~330 Y1 students)	2022
Graduate Teaching Assistant, XJTLU	2018—21
<i>Course:</i>	
▪ Human-Centric Computing (100+ Y2 students)	2018, 2020
▪ Data Structures (200+ Y1 students)	2018
▪ Principles of Computer Programming (~800 Y0 students)	2018—19
▪ Principles of Computer Games Design (80+ Y3 students)	2019—21
▪ Professional Skills and Emerging Topics in Computer Science (~200 Y0 students)	2019
▪ Professional Skills in Computer Science (~200 Y0 students)	2019
▪ Explore Advanced Technology (~800 Y0 students)	2020

Mentoring Experience (selected)

Master Thesis

- Craig Anderton. Investigating Sign Language Interpreter Rendering and Guiding Methods in Virtual Reality 360-Degree Content (2022)
Won ASSETS'22 Student Research Competition
Won BCU XPO Best Master Research
- Y. Yu. Assessing the Effects of a Full-body Motion-based Exergame in Virtual Reality (2018).

Bachelor Thesis

- J. Burns. Comparative Study of AR Versus Image and Video for Exercise Learning (2018).

- Z. Zhang. Studying the Effect of Display Type and Viewing Perspective on User Experience in Virtual Reality Exergames (2019).
- J. Zhu. An Investigation of Micro-and Macro-Interaction for 3D Manipulation using Dual-Hand Controller in Virtual Reality Environments (2018).

Summer Interns

- Y. Chen, X. Li, and K. Yu. Exploring Visual Techniques for Boundary Awareness During Interaction in Augmented Reality Head-Mounted Displays (2019).
- A. He, Z. Wang. Pointing and Selection Methods for Text Entry in Augmented Reality Head-Mounted Displays (2018).
- D. Yu, X. Lu, T. Zhang. DepthMove: Leveraging Head Motions in the Depth Dimension to Interact with Virtual Reality Head-Worn Displays (2018).

Professional Services

Conference Chair	ICDIIME'22 (Technical Program Chair) IEEE AIVR'22 (Virtual Setup Chair)
Program Committee	TEI WIP'21, IMX'22, CHI Play'22, iLRN'22, IMET'22
Conference Reviewer	CHI'21-22, IEEE ISMAR'21-22, IEEE VR'21-22, MobileHCI'21 VRST'19-21, SUI'21, CHI Play'20, TEI'20-21, AH'22
Journal Reviewer	Springer Virtual Reality JMIR Serious Games International Journal of Human-Computer Studies International Journal of Human-Computer Interaction IEEE Transactions on Games
Journal Editor	Frontiers in Virtual Reality, IEEE Transactions on Games
Grant Reviewer	EPSRC UKRI
Student Volunteer	IEEE VR'19, IEEE ISMAR'19

Awards

▪ High-Impact Articles (Games for Health Journal)	06.2022
▪ High-Impact Articles (Games for Health Journal)	03.2022
▪ ACM CHI Play Student Game Design Competition Finalist	11.2020
▪ Outstanding Teaching Team Award (UG programme) in Suzhou	06.2020
▪ IEEE VR Best Conference Paper Nominee	03.2020
▪ Best PhD Poster Award, XJTLU	12.2019
▪ Best PhD Presentation Award, XJTLU	12.2019
▪ Excellent Volunteer Service, IEEE ISMAR'19	10.2019
▪ Ph.D. Scholarship, RDF 15-02-12, XJTLU	2018—2020


Grant

▪ Gaming Interface for Aging Population. KSF-A-035 (CNY 1M)	2018-2020
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Publications

I have published peer-reviewed full papers in top-tier conferences like ACM CHI, IEEE VR, IEEE ISMAR and top-ranked journals such as IEEE TVCG, IJHCI, Games for Health. You can find a full list of my papers in [Google scholar](#) or [Researchgate](#)

Conference

- [12] X. Meng, X. Liu, B. Spittle, **W. Xu**, B. Gao, H.N. Liang. Exploring Text Selection in Augmented Reality Systems. (under review)
- [11] **W. Xu**, X. Meng, K. Yu, S. Sarcar, H.N. Liang. Evaluation Text Selection in Virtual Reality Head-Mounted Displays. *IEEE ISMAR'22*.
- [10] X. Meng, **W. Xu**, H.N. Liang. An Exploration of Hands-free Text Selection for Virtual Reality Head-Mounted Displays. *IEEE ISMAR'22*.
- [9] D. Monteiro, H.N. Liang, X. Wang, **W. Xu**, H. Tu. Design and Development of a Low-cost Device for Weight and Center of Gravity Simulation in Virtual Reality. *ACM ICMI'21*.
- [8] **W. Xu**, H.N. Liang, K. Yu, N. Baghaei. Effect of Gameplay Uncertainty, Display Type, and Age on Virtual Reality Exergames. *ACM CHI'21*.
- [7] X. Lu, D. Yu, H.N. Liang, **W. Xu**, Y. Chen, X. Li, K. Hasan. Exploration of Hands-free Text Entry Techniques for Virtual Reality. *IEEE ISMAR'20*.
- [6]  **W. Xu**, H.N. Liang, Y. Chen, X. Li, and K. Yu. Exploring Visual Techniques for Boundary Awareness During Interaction in Augmented Reality Head-Mounted Displays. *IEEE VR'20*. *Nominated for the best conference paper award (top5%)*.
- [5] D. Yu, H.N. Liang, X. Lu, T. Zhang, and **W. Xu**. DepthMove: Leveraging Head Motions in the Depth Dimension to Interact with Virtual Reality Head-Worn Displays. *IEEE ISMAR'19*.
- [4] **W. Xu**, H.N. Liang, A. He, and Z. Wang. Pointing and Selection Methods for Text Entry in Augmented Reality Head-Mounted Displays. *IEEE ISMAR'19*.
- [3] **W. Xu**, H.N. Liang, Y. Yu, D. Monteiro, K. Hasan, and C. Fleming. Assessing the Effects of a Full-body Motion-based Exergame in Virtual Reality. *Chinese CHI'19*.
- [2] **W. Xu**, H.N. Liang, Y. Zhao, D. Yu, and D. Monteiro. DMove: Directional Motion-based Interaction for Augmented Reality Head-Mounted Displays. *ACM CHI'19*.
- [1] **W. Xu**, H.N. Liang, Y. Yue. Directional Motion-based Interfaces for Virtual and Augmented Reality Head-mounted Displays. *ICOMSSC'18*.

Journal

- [11] **W. Xu**, H.N. Liang, K. Yu, S. Wen, N. Baghaei, H. Tu. Acceptance of Virtual Reality Exergames Among Chinese Older Adults. *International Journal of Human-Computer Interaction*.
- [10] J. Wang, H.N. Liang, D. Monteiro, **W. Xu**, J. Xiao. Real-time Prediction of Simulator Sickness in Virtual Reality Games. *IEEE Transactions on Games*.
- [9] **W. Xu**, H.N. Liang, N. Baghaei, X. Ma, K. Yu, X. Meng, S. Wen. Effects of an Immersive Virtual Reality Exergame on University Students' Anxiety, Depression, and Perceived Stress: Pilot Feasibility and Usability Study. *JMIR Serious Games*.
- [8] R. Shi, H.N. Liang, Y. Wu, D. Yu, and **W. Xu**. Virtual Reality Sickness Mitigation Methods: A Comparative Study in a Racing Game. *Proceedings of the ACM on Computer Graphics and Interactive Techniques*.
- [7] **W. Xu**, H.N. Liang, Q. He, X. Li, K. Yu, Y. Chen. Results and Guidelines From a Repeated-Measures Design Experiment Comparing Standing and Seated Full-Body Gesture-Based Immersive Virtual Reality Exergames: Within-Subjects Evaluation. *JMIR Serious Games*.
- [6] **W. Xu**, H.N. Liang, N. Baghaei, W.B. Bing, and Y. Yue. Health Benefits of Digital Videogames for the Ageing Population: A Systematic Review. *Games for Health*.
- [5] **W. Xu**, H.N. Liang, Z. Zhang, and N. Baghaei. Studying the Effect of Display Type and Viewing Perspective on User Experience in Virtual Reality Exergames. *Games for Health*.
- [4] **W. Xu**, H.N. Liang, Y. Zhao, T. Zhang, D. Yu, D. Monteiro, and Y. Yue. RingText: Dwell-free and hands-free Text Entry for Mobile Head-Mounted Displays using Head Motions. *IEEE Transactions on Visualization and Computer Graphics*.
- [3] D. Yu, K. Fan, H. Zhang, D. Monteiro, **W. Xu**, and H.N. Liang. PizzaText: Text entry for virtual reality systems using dual thumbsticks. *IEEE Transactions on Visualization and Computer Graphics*.

- [2] D. Yu, J. Zhu, **W. Xu**, H.N. Liang, C. Fleming, and Y. Yue. An Investigation of Micro-and Macro-Interaction for 3D Manipulation using Dual-Hand Controller in Virtual Reality Environments. *International Journal of Design, Analysis & Tools for Integrated Circuits & Systems*.
- [1] D. Monteiro, H.N. Liang, **W. Xu**, M. Brucker, V. Nanjappan, and Y. Yue. Evaluating Immersion, Presence, and Emulator Sickness in Virtual Reality Games based on First- and Third-Person Viewing Perspectives. *Computer Animation & Virtual Worlds*.

Book Chapter

- [1] R. Zheng, H.N. Liang, R. Xie, F. Lu, Y. Shi, **W. Xu**, and K. Papangelis. BlockTower: A Multi-player Cross-Platform Competitive Social Game. In *VR, Simulations and Serious Games for Education*.

Poster and Extended Abstract

- [5] B. Spittle, **W. Xu**, M. Frutos-Pascual, C. Creed, I. Williams. Socially Distanced: Have user evaluation methods for Immersive Technologies changed during the COVID-19 pandemic? *IEEE ISMAR'21*.
- [4] N. Baghaei, L. Stemmet, I. Khaliq, A. Ahmadi, I. Halim, H.N. Liang, **W. Xu**, M. Billingham, R. Porter. Designing Individualised Virtual Reality Applications for Supporting Depression: A Feasibility Study. *ACM EICS'21*.
- [3] **W. Xu**, H.N. Liang, X. Ma, and X. Li. VirusBoxing: A HIIT-based VR boxing game. *ACM CHI PLAY'20*.
- [2] J. Wang, H.N. Liang, D. Monteiro, **W. Xu**, H. Chen, Q. Chen. Real-Time Detection of Simulator Sickness in Virtual Reality Games Based on Players' Psychophysiological Data during Gameplay. *IEEE ISMAR'20*.
- [1] X. Lu, D. Yu, H.N. Liang, X. Feng, and **W. Xu**. DepthText: Leveraging Head Movements towards the Depth Dimension for Hands-free Text Entry in Mobile Virtual Reality Systems. *IEEE VR'19*.

Patent

- [3] H.N. Liang, D. Monteiro, **W. Xu**, X. Wang. A portable device for simulating weight and center of gravity in a virtual reality environment. CN patent App. CN202010885890.4 (Pending).
- [2] H.N. Liang, J. Wang, D. Monteiro, **W. Xu**. A real time detection method for simulator sickness in virtual environment. CN patent App. CN202010754321.6 (Pending).
- [1] H.N. Liang, **W. Xu**, Y. Yue. Dwell-Free Text Entry Technique for Mobile Virtual Reality Head-Mounted Displays. CN Patent App. CN108845754B (Approved).

Presentations

- [10] Design of VR Exergames for Mental and Physical Health. *IEEE ISMAR'22*.
- [9] Evaluation Text Selection in Virtual Reality Head-Mounted Displays. *IEEE ISMAR'22*.
- [8] An Exploration of Hands-free Text Selection for Virtual Reality Head-Mounted Displays. *IEEE ISMAR'22*.
- [7] DMT Lab Interface: Postgraduate Study an Introduction. *BCU*.
- [6] Effect of Gameplay Uncertainty, Display Type, and Age on Virtual Reality Exergames. *ACM CHI'21*.
- [5] DMove: Directional Motion-based Interaction for Augmented Reality Head-Mounted Displays. *XJTLU Oral Presentation Competition*.
- [4] Pointing and Selection Methods for Text Entry in Augmented Reality Head-Mounted Displays. *IEEE ISMAR'19*.
- [3] Assessing the Effects of a Full-body Motion-based Exergame in Virtual Reality. *Chinese CHI 2019*.
- [2] DMove: Directional Motion-based Interaction for Augmented Reality Head-Mounted Displays. *ACM CHI'19*.
- [1] RingText: Dwell-free and hands-free Text Entry for Mobile Head-Mounted Displays using Head Motions. *IEEE VR'19*.

Press

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|-----|--|----------------|
| [7] | Study assesses the efficacy of hands-free text selection systems for VR headsets | Tech Xplore |
| [6] | Facial expressions could be used to interact in virtual reality | Science News |
| | | Explores |
| [5] | What's it like to do a PhD at XJTLU? | XJTLU, 2021 |
| [4] | 在西交利物浦大学读博士是种什么体验? | XJTLU, 2021 |
| [3] | 读博, 不是为赢得博士这个“头衔” | XJTLU, 2021 |
| [2] | IEEE VR 中国学者宣讲论文精选 | VR China, 2020 |
| [1] | Virtual Reality Research Projects Accepted by International Symposium | XJTLU, 2018 |

References

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