Human-centered Artificial Intelligence Lab
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Ph.D.

Zhiming Hu

Curriculum Vitae

Short Bio

Zhiming Hu is a tenure-track Assistant Professor at The Hong Kong University of Science and Technology (Guangzhou) leading the Human-centered Artificial Intelligence (HAI) Lab starting from August 2025. He was a post-doctoral researcher in the Collaborative Artificial Intelligence Lab led by Prof. Andreas Bulling and the Computational Biophysics and Biorobotics Lab led by Prof. Syn Schmitt, in the University of Stuttgart, Germany from August 2022 to July 2025. He obtained his Ph.D. degree in Computer Software and Theory from Peking University, China in 2022, supervised by Prof. Guoping Wang. He received his Bachelor's degree in Optical Engineering from Beijing Institute of Technology, China in 2017. His research interests include virtual and augmented reality, human-computer interaction, eye tracking, embodied AI, and human-centered AI. He has published over 20 papers at top venues in VR/AR and HCI, including SIGGRAPH, TVCG, IEEE VR, ISMAR, CHI, and UIST. His work has won Best Journal Paper Award at ISMAR 2024 (the only one at the conference), Best Journal Paper Nominees at IEEE VR 2021 (first time for Chinese researchers), and Best Student Paper Nominees at INTERACT 2023. He serves as a reviewer for many top venues, including SIGGRAPH, TVCG, IEEE VR, ISMAR, CHI, UIST, IMWUT, CVPR, ICCV, ECCV, AAAI, TMM, IJHCI, and TCSVT.

Research Interests

My research interests include virtual and augmented reality, human-computer interaction, eye tracking, embodied AI, and human-centered AI. I mainly work on human behavior analysis and modeling for interactive systems with the purpose of understanding human behavior patterns and building human-centered intelligent interactive systems.

Academic Positions

- **Assistant Professor** 2025.08-
  Human-centered Artificial Intelligence Lab
  The Hong Kong University of Science and Technology (Guangzhou)
- **Post-doctoral Researcher** 2022.08-2025.07
  Collaborative Artificial Intelligence Lab, Led by Prof. Andreas Bulling
  Computational Biophysics and Biorobotics Lab, Led by Prof. Syn Schmitt
  University of Stuttgart

Education

- **Ph.D.** in Computer Software and Theory 2017.09-2022.07
  Graphics & Interactive Lab., **Peking University**, Supervised by Prof. Guoping Wang
- **B.Eng.** in Optical Engineering 2013.09-2017.07
  School of Optics and Photonics, **Beijing Institute of Technology**

Awards & Honours

- **Best Journal Paper Award at ISMAR 2024** (the only one at the conference)
- Baden-Wurttemberg Foundation Postdoctoral Fellowship, 2024
- **Best Student Paper Nominees at INTERACT 2023**
- SimTech Postdoctoral Fellowship, 2022
- National Scholarship (top 2%), 2021
- **Best Journal Paper Nominees at IEEE VR 2021** (first time for Chinese researchers)
- CSC (China Scholarship Council) Scholarship, 2020
- Chancellor's Scholarship (top 2%), 2020
- Leo KoGuan Scholarship (top 5%), 2019
- Leader Scholarship (top 0.2%, 7 out of over 3800 students), 2017
- National Scholarship (top 2%), 2016
- National Scholarship (top 2%), 2014

Research Projects

- Study on mechanisms of human visual attention in mixed reality, supported by National Natural Science Foundation of China (General project, rank **3/9**)

Professional Activities & Talks

Reviewing

- Journals: TVCG, IMWUT, TMM, IJHCI, TCSVT, TiiS, MTAP, VR, BRM
- Conferences: SIGGRAPH, CVPR, ICCV, ECCV, CHI, UIST, IEEE VR, ISMAR, AAAI, PG, ETRA

Organizing Committee

- Program Committee for AAAI 2026
- Presentation and Poster Chair for ETRA 2025
- Program Committee for AAAI 2025
- Associate Chair for MuC 2024
- International Program Committee for PETMEI 2024
- Virtualization Chair for ETRA 2024
- Associate Chair for MuC 2023
- Technical Program Committee member for iWOAR 2023

Invited Talks

- Investigating the Coordination of Human Eye Gaze and Body Movements in Extended Reality.

GAMES Webinar 2025, Hosted by Dr. Xinda Liu, July, 2025.

- Eye-body Coordination during Daily Activities for Gaze Prediction from Full-body Poses. ISMAR 2024, October, 2024.
- Gaze-guided Human Motion Forecasting. IROS 2024 workshop on Nonverbal Cues for Human-Robot Cooperative Intelligence, Hosted by Dr. Jouh Yeong Chew, October, 2024.
- Towards Human-centered Artificial Intelligence. Nanjing University 11th Chengyao Youth Forum, China, December, 2023.
- Towards Human-aware Intelligent User Interfaces. Peking University Fifth Youth Forum on the Next Generation Computer Sciences, China, December, 2023.
- Towards the Coordination of Eye, Body and Context in Daily Activities. Beijing Institute of Technology 10th Teli Forum, China, Hosted by Prof. Guoren Wang, November, 2023.
- The Coordination of Digital Humans. Peking University Career Talk on Computer Science, China, November, 2022.
- Analysis and Prediction of Human Visual Attention in Virtual Reality. Southeast University, China, Hosted by Prof. Ding Ding, June, 2022.
- Recognizing User Tasks from Eye and Head Movements in Immersive Virtual Reality. IEEE VR 2022, Hosted by Prof. Kiyoshi Kiyokawa, March, 2022.
- Forecasting Eye Fixations in Task-Oriented Virtual Environments. GAMES Webinar 2021, Hosted by Prof. Xubo Yang, September, 2021.
- Gaze Analysis and Prediction in Virtual Reality. ChinaVR 2020 - IEEE VR Night, Hosted by Prof. Lili Wang, September 2020.
- Eye-Head Coordination Model for Real-time Gaze Prediction. 2019 International Conference on VR/AR and 3D Display, Hosted by Prof. Feng Xu, June 2019.

Teaching

- Machine Perception and Learning, University of Stuttgart, 2022, Lecturer
- Computer Graphics, Peking University, 2018, Teaching Assistant
- Image and Video-Based 3D Reconstruction, Peking University, 2018, Teaching Assistant
- Programming Basics, Peking University, 2018, Teaching Assistant

Publications

* Corresponding author # Equal contribution

Journal Papers

1. **Zhiming Hu***, Guanhua Zhang, Zheming Yin, Daniel Haeufle, Syn Schmitt, Andreas Bulling. HaHeAE: Learning Generalisable Joint Representations of Human Hand and Head Movements in Extended Reality. IEEE Transactions on Visualization and Computer Graphics, 2025: 1-12. (**CCF A**)
2. **Zhiming Hu***, Zheming Yin, Daniel Haeufle, Syn Schmitt, Andreas Bulling. HOIMotion: Forecasting Human Motion During Human-Object Interactions Using Egocentric 3D Object

Bounding Boxes. IEEE Transactions on Visualization and Computer Graphics (ISMAR 2024 Journal-track), 2024, 30(11): 7375 - 7385. (**CCF A**, ***Best Journal Paper Award***)

3. **Zhiming Hu***, Jiahui Xu, Syn Schmitt, Andreas Bulling. Pose2Gaze: Eye-body Coordination during Daily Activities for Gaze Prediction from Full-body Poses. IEEE Transactions on Visualization and Computer Graphics (oral presentation at ISMAR 2024), 2025, 31(9): 4655-4666. (**CCF A**)
4. Yao Wang, Yue Jiang, **Zhiming Hu**, Constantin Ruhdorfer, Mihai Bâce, Andreas Bulling. VisRecall++: Analysing and Predicting Visualisation Recallability from Gaze Behaviour. Proceedings of the ACM on Human-Computer Interaction (PACM HCI), 2024, 8(ETRA): 1-18.
5. Mayar Elfares, Pascal Reisert, **Zhiming Hu**, Wenwu Tang, Ralf Küsters, Andreas Bulling. PrivatEyes: Appearance-based Gaze Estimation Using Federated Secure Multi-Party Computation. Proceedings of the ACM on Human-Computer Interaction (PACM HCI), 2024, 8(ETRA): 1-23.
6. Zehui Lin, Xiang Gu, Sheng Li, **Zhiming Hu**, Guoping Wang. Intentional Head-Motion Assisted Locomotion for Reducing Cybersickness. IEEE Transactions on Visualization and Computer Graphics, 2023, 29(8): 3458-3471. (**CCF A**)
7. **Zhiming Hu**, Andreas Bulling, Sheng Li, Guoping Wang. EHTask: Recognizing User Tasks from Eye and Head Movements in Immersive Virtual Reality. IEEE Transactions on Visualization and Computer Graphics, 2023, 29(4): 1992-2004. (**CCF A**)
8. **Zhiming Hu**, Sheng Li, Meng Gai. Research progress of user task prediction and algorithm analysis (in Chinese). Journal of Graphics, 2021, 42(3): 367-375.
9. **Zhiming Hu**, Andreas Bulling, Sheng Li, Guoping Wang. FixationNet: Forecasting Eye Fixations in Task-Oriented Virtual Environments. IEEE Transactions on Visualization and Computer Graphics (IEEE VR 2021 Journal-track), 2021, 27(5): 2681-2690. (**CCF A**, ***Best Journal Paper Nominees***)
10. **Zhiming Hu**, Sheng Li, Congyi Zhang, Kangrui Yi, Guoping Wang, Dinesh Manocha. DGaze: CNN-Based Gaze Prediction in Dynamic Scenes. IEEE Transactions on Visualization and Computer Graphics (IEEE VR 2020 Journal-track), 2020, 26(5): 1902-1911. (**CCF A**)
11. **Zhiming Hu**, Sheng Li, Meng Gai. Temporal continuity of visual attention for future gaze prediction in immersive virtual reality. Virtual Reality and Intelligent Hardware, 2020, 2(2): 142-152.
12. **Zhiming Hu**, Congyi Zhang, Sheng Li, Guoping Wang, Dinesh Manocha. SGaze: A Data-Driven Eye-Head Coordination Model for Realtime Gaze Prediction. IEEE Transactions on Visualization and Computer Graphics (IEEE VR 2019 Journal-track), 2019, 25(5): 2002-2010. (**CCF A**)

Conference Papers

1. Chuhan Jiao, **Zhiming Hu***, Andreas Bulling. HAGI: Head-Assisted Gaze Imputation for Mobile Eye Trackers. Proceedings of the ACM Symposium on User Interface Software and Technology, 2025: 1-14. (**CCF A**)
2. **Zhiming Hu***, Daniel Haeufle, Syn Schmitt, Andreas Bulling. HOIGaze: Gaze Estimation During Hand-Object Interactions in Extended Reality Exploiting Eye-Hand-Head Coordination.

Proceedings of the ACM Special Interest Group on Computer Graphics and Interactive Techniques, 2025: 1-10. (**CCF A**)

3. Guanhua Zhang, Mohamed Ahmed, **Zhiming Hu***, Andreas Bulling. SummAct: Uncovering User Intentions Through Interactive Behaviour Summarisation. Proceedings of the ACM CHI Conference on Human Factors in Computing Systems, 2025: 1-17. (**CCF A**)
4. Haodong Yan#, **Zhiming Hu#***, Syn Schmitt, Andreas Bulling. GazeMoDiff: Gaze-guided Diffusion Model for Stochastic Human Motion Prediction. Proceedings of the Pacific Conference on Computer Graphics and Applications, 2024: 1-12. (**CCF B**)
5. Guanhua Zhang, **Zhiming Hu***, Andreas Bulling. DisMouse: Disentangling Information from Mouse Movement Data via Diffusion Models. Proceedings of the ACM Symposium on User Interface Software and Technology, 2024: 1-13. (**CCF A**)
6. **Zhiming Hu***, Syn Schmitt, Daniel Haeufle, Andreas Bulling. GazeMotion: Gaze-guided Human Motion Forecasting. Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems, 2024: 13017-13022. (**top robotics conference, Oral Presentation**)
7. Guanhua Zhang, **Zhiming Hu***, Mihai Bâce, Andreas Bulling. Mouse2Vec: Learning Reusable Semantic Representations of Mouse Behaviour. Proceedings of the ACM CHI Conference on Human Factors in Computing Systems, 2024: 1-17. (**CCF A**)
8. Yao Wang, Weitian Wang, Abdullah Abdelhafez, Mayar Elfares, **Zhiming Hu***, Mihai Bâce, Andreas Bulling. SalChartQA: Question-driven Saliency on Information Visualisations. Proceedings of the ACM CHI Conference on Human Factors in Computing Systems, 2024: 1-14. (**CCF A**)
9. Chuhan Jiao, **Zhiming Hu***, Mihai Bâce, Andreas Bulling. SUPREYES: SUPer Resolution for EYES Using Implicit Neural Representation Learning. Proceedings of the ACM Symposium on User Interface Software and Technology, 2023: 1-13. (**CCF A**)
10. Guanhua Zhang, Matteo Bortoletto, **Zhiming Hu***, Lei Shi, Mihai Bâce, Andreas Bulling. Exploring Natural Language Processing Methods for Interactive Behaviour Modelling. Proceedings of the IFIP Conference on Human-Computer Interaction, 2023: 3-26.(***Best Student Paper Nominees***)

Short Papers, Abstracts, and Workshops

1. Mayar Elfares, **Zhiming Hu**, Pascal Reisert, Andreas Bulling, Ralf Küsters. Federated Learning for Appearance-based Gaze Estimation in the Wild. Proceedings of the NeurIPS Workshop Gaze Meets ML, 2023: 20-36.
2. **Zhiming Hu**. Eye Fixation Forecasting in Task-Oriented Virtual Reality. Proceedings of the IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops, 2021: 707-708.
3. **Zhiming Hu**. Gaze Analysis and Prediction in Virtual Reality. Proceedings of the IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops, 2020: 543-544.