

# Feiyu Lu, PhD

RESEARCH SCIENTIST

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## About Me

Feiyu Lu is a Senior Researcher in the Multimodal Experiences Lab, Advanced Technology Group at Dolby Laboratories. His research interest lies in the intersections of **Spatial/Multimodal Interaction**, **Human-AI Interaction**, and **Augmented/Virtual/Mixed Reality**.

## Education

### Virginia Polytechnic Institute and State University (Virginia Tech)

Blacksburg, VA, USA

Ph.D. in Computer Science & Applications

Aug 2018 - May 2023

- Research Group: **3D Interaction Group**
- I conduct research on novel spatial multimodal user interfaces for lightweight head-worn displays.
- My dissertation research received the prestigious VR Dissertation Award by the IEEE Visualization and Graphical Technical Community.
- Advisor: **Prof. Doug A. Bowman**
- Dissertation: **Glanceable AR - Towards a Pervasive and Always-On Augmented Reality Future**
- Committee Members: Prof. Joseph L. Gabbard, Prof. Wallace Lages, Prof. Sang Won Lee, Prof. Yalong Yang, Prof. Steven K. Feiner

### Xi'an Jiaotong-Liverpool University (XJTLU)

Suzhou, Jiangsu, China

B.Eng in Computer Engineering

Sep 2014 - Jun 2018

- Advisor: **Prof. Hai-Ning Liang**
- Graduated with First-Class Honor (Top 5%)

## Work Experience

### Advanced Technology Group, Dolby Laboratories

Atlanta, GA, USA

Senior Researcher

Mar 2026 - Current

- I am a Senior Researcher at the Multimodal Experiences Lab, Advanced Technology Group at Dolby Laboratories.
- I research the future of multisensory and immersive human experiences empowered by digital and intelligent media.

### Immersive Technology & Spatial Computing Team, JPMorganChase

New York, NY, USA

Research Scientist

May 2023 - Mar 2026

- I worked as an Applied Research Scientist in the Global Technology Applied Research Group at JPMC.
- I investigated novel integrations of immersive technology, interactive wall displays, and AI/ML techniques such as reinforcement learning, large language models, and large multimodal models to addressing concrete business problems and advancing our clients & employee experiences.
- I worked with internal stakeholders, build novel intelligent systems, conduct user-centric research, and deliver tech-transfer-ready proof-of-concept systems to boost employee productivity and client engagement.
- I contributed to six patents, five full papers, and three extended abstracts at top conferences.
- Supervisor: **Prof. Blair MacIntyre**

### Reality Labs Research, Meta Inc.

Redmond, WA, USA

Research Scientist Intern

May 2022 - Aug 2022

- I worked with teams at Reality Labs Research to perform user experience research on spatial multimodal interactions.
- I researched how user and system factors may influence the perceived human-AI interaction experience in AR/VR.
- I conducted a remote VR study with over 80 participants.
- My work has led to two full paper publications top conferences, including a Best Paper Honorable Mention award at the 2023 ACM CHI conference on Human Factors in Computing Systems.
- Supervisor: Yan Xu

### Reality Labs Research, Meta Inc.

Remote

Research Intern

May 2021 - Aug 2021

- I worked with teams at Reality Labs Research to perform usability evaluations on intelligent AI-driven user interfaces.
- I conducted workshops with UX researchers and designers to identify pain-points during AR interactions.
- I conducted a remote VR study with over 40 participants.
- My work was led to one patent and one full paper publication at the 2022 ACM CHI conference on Human Factors in Computing Systems.
- Supervisor: Yan Xu

## Selected Publications

I published the majority of my work in premiere conferences / journals on spatial user interactions / human-computer interactions / immersive technologies. The typical acceptance rates of these venues are around 25%. Below is a selected list of my publications.

### S-TIER: Situated-Traceable Insights in Extended Reality for Hybrid Crisis Management

**Feiyu Lu\***, Cheng Yao Wang\*, Leonardo Pavanatto, Fannie Liu, David Saffo, Benjamin Lee, Mengyu Chen, Blair MacIntyre

In submission, 2026, TBD

DOI: InSubmission

## “Where Did My Apps Go?” Supporting Scalable and Transition-Aware Access to Everyday Applications in Head-Worn Augmented Reality

Feiyu Lu, Leonardo Pavanatto, Shakiba Davari, Lei Zhang, Lee Lisle, Doug A. Bowman

IEEE Transactions on Visualization and Computer Graphics. 2025

doi: 10.1109/TVCG.2024.3493115

## Adaptive 3D UI Placement in Mixed Reality Using Deep Reinforcement Learning

Feiyu Lu\*, Mengyu Chen\*, Hsiang Hsu, Pranav Deshpande, Cheng Yao Wang, Blair MacIntyre

Extended Abstracts of the CHI Conference on Human Factors in Computing Systems, 2024, Honolulu, HI, USA

doi: 10.1145/3613905.3651059

## Exploring the Impact of User and System Factors on Human-AI Interactions in Head-Worn Displays

Feiyu Lu, Yan Xu, Xuhai Xu, Brennan Jones, Laird Malamed

2023 IEEE International Symposium on Mixed and Augmented Reality (ISMAR), 2023, Sydney, NSW, Australia

doi: 10.1109/ISMAR59233.2023.00025

## Exploring Spatial UI Transition Mechanisms with Head-Worn Augmented Reality

Feiyu Lu, Yan Xu

Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems (CHI), 2022, New Orleans, LA, USA

doi: 10.1145/3491102.3517723

## Evaluating the Potential of Glanceable AR Interfaces for Authentic Everyday Uses

Feiyu Lu, Doug A. Bowman

2021 IEEE Virtual Reality and 3D User Interfaces (VR), 2021, Lisbon, Portugal

doi: 10.1109/VR50410.2021.00104

## Exploration of Techniques for Rapid Activation of Glanceable Information in Head-Worn Augmented Reality

Feiyu Lu, Shakiba Davari, Doug A. Bowman

Proceedings of the 2021 ACM Symposium on Spatial User Interaction (SUI), 2021, Virtual Event, USA

doi: 10.1145/3485279.3485286

## Glanceable AR: Evaluating Information Access Methods for Head-Worn Augmented Reality

Feiyu Lu, Shakiba Davari, Lee Lisle, Yuan Li, Doug A. Bowman

2020 IEEE Conference on Virtual Reality and 3D User Interfaces (VR), 2020, Atlanta, GA, USA

doi: 10.1109/VR46266.2020.00113

## Awards

2025	<b>VR Dissertation Award</b> , IEEE Visualization and Graphics Technical Community (VGTC)	Saint-Malo, France
2024	<b>Prolific Inventor</b> , Global Technology Applied Research	JPMorganChase
2023	<b>Best Paper Honorable Mention Award (Top 5%)</b> , CHI'23	Hamburg, Germany
2022	<b>Best 3DUI Award (1 of 11 teams)</b> , IEEEVR'22	Christchurch, New Zealand
2021	<b>Best Paper Honorable Mention Award (Top 5%)</b> , SUI'21	Virtual Event
2021	<b>Finalist (Top 3.5% of 2,163 applicants)</b> , Facebook Ph.D. Fellowship	Virtual Event
2021	<b>Best 3DUI Award (1 of 17 teams)</b> , IEEEVR'21	Lisbon, Portugal

## Patents

2025	<b>System and Method for Long-Term Video Analysis and Context-Aware Search Using Vision-Language Models</b> , No. 19/222,406	with JPMorganChase
2024	<b>Privacy-preserving Methods for Remote Space Sharing in Enterprise Environment</b> , No. 18/774,705	with JPMorganChase
2024	<b>Systems and Methods for Hybrid Cross-Reality Collaboration Around an Large Interactive Display</b> , No. 18/882,495	with JPMorganChase
2024	<b>HybridPortal: Enabling Hybrid Social Interactions for Hybrid Events</b> , No. 18/882,477	with JPMorganChase
2024	<b>Systems and Methods for Audience Feedback Guided Mixed Reality</b> , No. 18/769,647	with JPMorganChase
2023	<b>Systems and Methods for Placement of Virtual Content Objects in an Extended Reality Environment Based on Reinforcement Learning</b> , No. 18/407,003	with JPMorganChase
2021	<b>Dynamic Widget Placement Within an Artificial Reality Display</b> , No. 17/747,767	with Meta Inc.
2020	<b>Interacting with Glanceable Information in Wearable Augmented Reality</b> , No. 63/147,805	with Virginia Tech

## Skills

Research	<b>Human-AI Interaction, Multimodal Input, Spatial Computing, Extended Reality, Human-Computer Interaction.</b>
Programming/Platform	<b>Python, C#, JavaScript/TypeScript, Swift, WebXR, VisionOS, Meta Quest.</b>
Tools	<b>Unity3D, BabylonJS, Arduino, Blender, R, SPSS, Adobe Suites.</b>
Method	<b>Rapid Prototyping, Mixed-methods Research, Inferential Statistical, Thematic Analysis, Experimental Design, Usability Evaluation, Performance Modeling.</b>