

Lee Lisle

COMPUTER SCIENCE RESEARCHER

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Research Interests

- Virtual & Augmented Reality
- Immersive Analytics
- Embodied Interaction
- Human-Centered Computing
- 3d User Interaction Techniques
- Social Virtual Reality & Identity

Education

Doctor of Philosophy in Computer Science

Blacksburg, VA

VIRGINIA TECH

December 2022

Advisor: Dr. Doug A. Bowman, Dissertation: *Immersive Space to Think: Immersive Analytics for Sensemaking with Non-Quantitative Datasets*

Master of Science in Computer Science

Blacksburg, VA

VIRGINIA TECH

December 2021

Advisor: Dr. Doug A. Bowman

Bachelor of Science in Computer Engineering

Blacksburg, VA

VIRGINIA TECH

May 2015

Advisor: Dr. Joseph L. Gabbard

Research Experience

Visiting Research Associate - XRAI Lab

June 2026 to Present

VIRGINIA TECH

Blacksburg, VA

Focused on mentorship, perception, and embodiment in mixed reality

Research Associate - Synthetic Reality Lab

June 2025 to May 2026

UNIVERSITY OF CENTRAL FLORIDA

Orlando, FL

Focused on mentorship, perception, and embodiment in mixed reality

Postdoctoral Research Associate - Virginia Tech National Security Institute

October 2023 to November 2024

VIRGINIA TECH

Blacksburg, VA

Focusing on designing, implementing, and testing immersive analytics visualizations for cybersecurity analysis in augmented reality

Graduate Research Assistant - 3DI Group

January 2018 to December 2022

VIRGINIA TECH

Blacksburg, VA

Focused on Sensemaking with immersive analytics in augmented and virtual reality

Graduate Research Assistant - Crowd Intelligence Lab

January 2017 to December 2017

VIRGINIA TECH

Blacksburg, VA

Focused on crowdsourcing and gamification for complex biological problems

Undergraduate Research Assistant - COGENT Lab

January 2013 to May 2015

VIRGINIA TECH

Blacksburg, VA

Focused on simulator interface integration and user experience design

Grants

NSF Travel Grant for Doctoral Students

Fall 2025

"TRAVEL: NSF STUDENT TRAVEL GRANT FOR 2025 DOCTORAL CONSORTIUM (DC) AT THE IEEE INTERNATIONAL SYMPOSIUM ON MIXED AND AUGMENTED REALITY (ISMAR)

\$22,500

S.J. Kim and L. Lisle

Institute for Creativity, Arts, & Technology SEAD Grant

Fall 2021 - Spring 2022

"TRANSFORMING PUBLIC ENGAGEMENT WITH UNDERREPRESENTED STORIES THROUGH HUMANITIES SOURCES AND IMMERSIVE EXPERIENCES"

\$23,000

E. Gitre, D. Bowman, C. North, P. Newbill, and L. Lisle

Awards and Honors

Best Paper Honorable Mention - IEEE International Symposium on Mixed and Augmented Reality

October 2022

"EXPLORING THE IMPACT OF VISUAL INFORMATION ON INTERMITTENT TYPING IN VIRTUAL REALITY"

Best Contest Entry - IEEE Conference on Virtual Reality and 3D User Interfaces

March 2022

"CLEAN THE OCEAN: AN IMMERSIVE VR EXPERIENCE PROPOSING NEW MODIFICATIONS TO GO-GO AND WIM TECHNIQUES" (PRIMARY AUTHOR)

Pratt Fellowship Scholar

Spring 2022

FELLOWSHIP FOR HIGH-ACHIEVING PH.D CANDIDATES AT VIRGINIA TECH

Best Paper Nomination - IEEE Conference on Virtual Reality and 3D User Interfaces

March 2021

"SENSEMAKING STRATEGIES WITH IMMERSIVE SPACE TO THINK" (PRIMARY AUTHOR)

Best Contest Entry - IEEE Conference on Virtual Reality and 3D User Interfaces

March 2021

"FANTASTIC VOYAGE 2021: USING INTERACTIVE VR STORYTELLING TO EXPLAIN TARGETED COVID-19 VACCINE DELIVERY TO ANTIGEN-PRESENTING CELLS"

I/ITSEC 2019 RADM Fred Lewis Postgraduate Scholarship

December 2019

\$10,000 SCHOLARSHIP AWARD FOR GRADUATE STUDENTS IN MODELING, SIMULATION, TRAINING, OR EDUCATION

Publications

Peer Reviewed Journal Papers (6)

[1] Having Dog Ears "for Real": Effects of Active and Passive Haptics on Embodying Non-Human Body Parts in VR

October 2026

O.A. KHAN, B.H. TRINH, L. LISLE, T.D. DO

IEEE Transactions on Visualization and Computer Graphics, (ISMAR Journal Track) 16% Acceptance Rate

[2] "Where did my apps go?" Supporting Scalable and Transition-Aware Access to Everyday Applications in Head-Worn Augmented Reality

November 2024

F. LU, L. PAVANATTO, S. DAVARI, L. ZHANG, L. LISLE, D.A. BOWMAN

IEEE Transactions on Visualization and Computer Graphics, Impact Factor: 6.8

[3] Investigating Professional Analyst Strategies in Immersive Space to Think

August 2024

K. DAVIDSON, L. LISLE, I.A. TAHMID, K. WHITLEY, C. NORTH, D.A. BOWMAN

IEEE Transactions on Visualization and Computer Graphics, Impact Factor: 6.5

[4] Different Realities: a Comparison of Augmented and Virtual Reality for the Sensemaking Process

August 2023

L. LISLE, K. DAVIDSON, E.J.K. GITRE, C. NORTH, D.A. BOWMAN

Frontiers in Virtual Reality, Impact Factor: 3.9

[5] Exploring the Evolution of Sensemaking Strategies in Immersive Space to Think

September 2022

K. DAVIDSON, L. LISLE, K. WHITLEY, D.A. BOWMAN, C. NORTH

IEEE Transactions on Visualization and Computer Graphics, p. 1-15, Impact Factor: 4.9

[6] Effects of Volumetric Augmented Reality Displays on Human Depth Judgments: Implications for Heads-Up Displays in Transportation

April 2019

L. LISLE, C. MERENDA, K. TANOUS, H. KIM, J.L. GABBARD, D.A. BOWMAN

International Journal of Mobile Human Computer Interaction, p. 1-18

Refereed Conference Papers (12)

[7] Rare Events, Costly Switches: How Attentional Distribution Asymmetry Modulates Switching Costs across Augmented Reality and the Real World

October 2026

Z.D. CHOUDHARY, L. LISLE, G. BRUDER, G. WELCH

ACM Symposium on Spatial User Interaction

[8] Cognitive Performance During Display Switching in Optical See-Through Augmented Reality

October 2026

Z.D. CHOUDHARY, L. LISLE, A. ALWIN, G. BRUDER, G. WELCH

International Symposium on Mixed and Augmented Reality, **21% Acceptance Rate**

[9] Spaces to Think: a Comparison of Small, Large, and Immersive Displays for the Sensemaking Process

October 2023

L. LISLE, K. DAVIDSON, L. PAVANATTO, I.A. TAHMID, C. NORTH, D.A. BOWMAN

International Symposium on Mixed and Augmented Reality

[10] Uncovering Best Practices in Immersive Space to Think

October 2023

K. DAVIDSON, L. LISLE, I.A. TAHMID, K. WHITLEY, C. NORTH, D.A. BOWMAN

International Symposium on Mixed and Augmented Reality

[11] Evaluating the Feasibility of Predicting Information Relevance During Sensemaking with Eye Gaze Data

October 2023

I.A. TAHMID, L. LISLE, K. DAVIDSON, K. WHITLEY, C. NORTH, D.A. BOWMAN

International Symposium on Mixed and Augmented Reality

[12] Exploring the Impact of Visual Information on Intermittent Typing in Virtual Reality

October 2022

A. GIOVANNELLI, L. LISLE, D.A. BOWMAN

Best Paper Honorable Mention

International Symposium on Mixed and Augmented Reality, p. 8-17, **21.6% Acceptance Rate**

[13] Evaluating the Benefits of Explicit and Semi-Automated Clusters for Immersive Sensemaking

October 2022

I.A. TAHMID, L. LISLE, K. DAVIDSON, C. NORTH, D.A. BOWMAN

International Symposium on Mixed and Augmented Reality, p. 479-488, **21.6% Acceptance Rate**

[14] Sensemaking Strategies with the Immersive Space to Think

March 2021

L. LISLE, K. DAVIDSON, E.J.K. GITRE, C. NORTH, D.A. BOWMAN

Best Paper Nomination

IEEE Conference on Virtual Reality and 3D User Interfaces, p. 529-537, **19.7% Acceptance Rate**

[15] Glanceable AR: Evaluating Information Access Methods for Head-Worn Augmented Reality

March 2020

F. LU, S. DAVARI, L. LISLE, Y. LI, D.A. BOWMAN

IEEE Conference on Virtual Reality and 3D User Interfaces, p. 930-939, **17.9% Acceptance Rate**

[16] Enhanced Geometric Techniques for Point Marking in Model-Free Augmented Reality

October 2019

W. LAGES, Y. LI, L. LISLE, T. HÖLLERER, D.A. BOWMAN

International Symposium on Mixed and Augmented Reality, p. 301-309, **21.4% Acceptance Rate**

[17] Effect of Volumetric Displays on Depth Perception in Augmented Reality

September 2018

L. LISLE, K. TANOUS, H. KIM, J.L. GABBARD, D.A. BOWMAN

International Conference on Automotive User Interfaces and Interactive Vehicular Applications, p. 155-163

[18] Crowdlayout: Crowdsourced design and evaluation of biological network visualizations

April 2018

D.P. SINGH, **L. LISLE**, T.M. MURALI, K. LUTHER

CHI Conference on Human Factors in Computing Systems, p. 1-14, **25.7% Acceptance Rate**

Other Publications (14)

[19] Tales of Scales: Interviews with Furies and their Experiences of Social Virtual Reality

August 2026

L. LISLE, A.H. LISLE, G. FREEMAN

Workshop Paper

2026 Future of Human-Computer Interaction Workshop (FutureHCI)

[20] Moving Towards Visibility Evaluation in Augmented Reality Using Simulated Environments and Continuous Psychophysics

March 2026

A. ALWIN, M. GOTTSACKER, H. FURUYA, **L. LISLE**, G. BRUDER, G. WELCH

Workshop Paper

IEEE Conference on Virtual Reality and 3D User Interfaces

[21] Effects of Multisensory Feedback and Real-World Priming on Presence and Copresence in Mixed Reality Drone Simulation

March 2026

H. FURUYA, J. J. DEGUZMAN, Z. D. CHOUDHARY, M. GOTTSACKER, A. ALWIN, **L. LISLE**, G. BRUDER, G. WELCH

Workshop Paper

IEEE Conference on Virtual Reality and 3D User Interfaces

[22] Can You See It? Evaluating Color Visibility in Simulated Outdoor Environments

March 2026

A. ALWIN, M. GOTTSACKER, H. FURUYA, A. DELMO, **L. LISLE**, G. BRUDER, G. WELCH

Poster

IEEE Conference on Virtual Reality and 3D User Interfaces

[23] Planet Purifiers: A Collaborative Immersive Experience Proposing New Modifications to HOMER and Fishing Reel Interaction Techniques

March 2025

A. GIOVANNELLI, F.C. MURPHY, T. DAVIS, C. LEE, R. ABULIKEMU, M. GALLAGHER, S. SHARMA, **L. LISLE**, D.A. BOWMAN

3DUI Contest Entry

IEEE Conference on Virtual Reality and 3D User Interfaces

[24] Evaluating the Impact of Sonification in an Immersive Analytics Environment Using Real-World Geophysical Datasets

March 2025

D. SARDANA, L. LISLE, D. GRACANIN, I.I. BUKVIC, K. MATKOVIC, G. EARLE

Poster

IEEE Conference on Virtual Reality and 3D User Interfaces

[25] Glanceable Augmented Reality for Cybersecurity Analysts

September 2024

L. LISLE, M. THOMPSON

Abstract

International Test and Evaluation Association Cybersecurity Workshop

[26] CoLT: Enhancing Collaborative Literature Review Tasks with Synchronous and Asynchronous Awareness Across the Reality-Virtuality Continuum

October 2023

I.A. TAHMID, F. RODRIGUES, A. GIOVANNELLI, **L. LISLE**, J. THOMAS, D.A. BOWMAN

Contest Entry

IEEE International Symposium on Mixed and Augmented Reality (ISMAR)

[27] Clean the Ocean: An Immersive VR Experience Proposing New Modifications to Go-Go and WiM Techniques

March 2022

L. LISLE, F. LU, S. DAVARI, I.A. TAHMID, A. GIOVANNELLI, C. ILO, L. PAVANATTO, L. ZHANG, L. SCHLUETER, D.A. BOWMAN

Best Contest Entry

IEEE Conference on Virtual Reality and 3D User Interfaces, p. 920-921

[28] Fantastic Voyage 2021: Using Interactive VR Storytelling to Explain Targeted COVID-19 Vaccine Delivery to Antigen-Presenting Cells

March 2021

L. ZHANG, F. LU, I.A. TAHMID, **L. LISLE**, S. DAVARI, N. GUTKOWSKI, L. SCHLUETER, D.A. BOWMAN

Best Contest Entry

IEEE Conference on Virtual Reality and 3D User Interfaces, p. 695-696

[29] Integrating Everyday Proxy Objects in Multi-Sensory Virtual Reality Storytelling

May 2021

S. DAVARI, Y. LI, **L. LISLE**, F. LU, L. ZHANG, L. BLUSTEIN, D.A. BOWMAN

Workshop Paper

CHI Conference on Human Factors in Computing Systems Abstracts and Workshops

[30] Evaluating the Benefits of the Immersive Space to Think

L. LISLE, X. CHEN, E.J.K. GITRE, C. NORTH, D.A. BOWMAN

IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops, p. 331-337

March 2020

Workshop Paper

[31] The Immersive Space to Think: Immersive Analytics for Multimedia Data

L. LISLE

IEEE Conference on Virtual Reality and 3D User Interfaces, p. 551-552

March 2020

Doctoral Consortium

[32] Save the Space Elevator: An Escape Room Scenario Involving Passive Haptics in Mixed Reality

S. DAVARI, Y. LI, L. LISLE, F. LU, L. ZHANG, L. BLUSTEIN, F. XUETING, B. GABALDON, M. KWIATOWSKI, D.A. BOWMAN

IEEE Conference on Virtual Reality and 3D User Interfaces, p. 1405-1406

March 2019

3DUI Contest Entry

Teaching & Mentorship

Teaching

CAP5118: Fundamentals of VR (1 class)

UNIVERSITY OF CENTRAL FLORIDA - GUEST LECTURER

Blended Student Mentorship

UNIVERSITY OF CENTRAL FLORIDA

Soon after joining SREAL, I was put in collaboration with three graduate students and two undergraduate students to perform three research projects. I helped oversee and guide them through the experimental design, implementation, evaluation, and dissemination of their work. We expect five academic papers from the teamwork from one year of work.

Grad Student Mentorship

VIRGINIA TECH

I was able to help a new graduate student transition from industry to Academia. I provided him guidance to earn a position in the 3DI lab through providing him a letter of recommendation, and then guide him through the research process, including study design and implementation, data analysis, and the publishing process.

Undergraduate Student Mentorship

VIRGINIA TECH

I helped hire and mentor an undergraduate student on a project where IST was adapted to a history exhibit. They were an art student at the time and created several assets for the project. Several times we worked together closely to get prototype demos done for showing it to various stakeholders.

CS4784: HCI Capstone (2 classes)

VIRGINIA TECH - SUBSTITUTING FOR DR. DOUGLAS BOWMAN

CS5714: Usability Engineering (1 class)

VIRGINIA TECH - SUBSTITUTING FOR DR. JOSEPH GABBARD

Fall 2025

Summer 2025 - Present

SREAL Perception Team

Fall 2021 - Fall 2022

3DI Group junior graduate student

Summer 2021 - Fall 2021

IST History Exhibit Project

Spring 2021

Spring 2020

Invited Talks

Immersive Space to Think: Immersive Multimedia Sensemaking

GRADUATE STUDENT SEMINAR

Virginia Tech

November 2021

Professional Service

Workshops Organized

Future of HCI Workshop

CENTER FOR HUMAN COMPUTER INTERACTION AT VIRGINIA TECH

Program Chair, 2026

Future Faculty Forum (F3) IEEE CONFERENCE ON VIRTUAL REALITY AND 3D USER INTERFACES	2024-2026
Inclusion, Diversity, Equity, Accessibility, Transparency, and Ethics in XR (IDEATEXR) INTERNATIONAL SYMPOSIUM ON MIXED AND AUGMENTED REALITY	<i>Primary Organizer, 2024-2025</i>
Inclusion, Diversity, Equity, Accessibility, Transparency, and Ethics in XR (IDEATEXR) IEEE CONFERENCE ON VIRTUAL REALITY AND 3D USER INTERFACES	<i>Primary Organizer ('24, '25), 2024-2026</i>
Future Faculty Forum (F3) INTERNATIONAL SYMPOSIUM ON MIXED AND AUGMENTED REALITY	2024-2025

Committees & Chairing

International Program Committee Member ACM SYMPOSIUM ON VIRTUAL REALITY SOFTWARE AND TECHNOLOGY	2025-2026
Associate Paper Chair INTERNATIONAL SYMPOSIUM ON MIXED AND AUGMENTED REALITY	2026
International Poster Program Committee Member ACM CHI CONFERENCE ON HUMAN FACTORS IN COMPUTING SYSTEMS	2026
International Program Committee Member - Ux Subcommittee ACM CHI CONFERENCE ON HUMAN FACTORS IN COMPUTING SYSTEMS	2026
International Program Committee Member IEEE CONFERENCE ON VIRTUAL REALITY AND 3D USER INTERFACES	2026
International Program Committee Member INTERNATIONAL SYMPOSIUM ON MIXED AND AUGMENTED REALITY	2024-2025
Doctoral Consortium Chair INTERNATIONAL SYMPOSIUM ON MIXED AND AUGMENTED REALITY	2025
Poster Program Committee Member IEEE CONFERENCE ON VIRTUAL REALITY AND 3D USER INTERFACES	2025
Doctoral Consortium Chair INTERNATIONAL SYMPOSIUM ON MIXED AND AUGMENTED REALITY	2025
NSF Review Panelist NATIONAL SCIENCE FOUNDATION	2024
Participant Pool Committee Member VIRTUAL EXPERIENCE RESEARCH ACCELERATOR	2024
Doctoral Consortium Chair INTERNATIONAL SYMPOSIUM ON MIXED AND AUGMENTED REALITY	2024
Web Chair INTERNATIONAL SYMPOSIUM ON MIXED AND AUGMENTED REALITY	2021

Peer Review Experience

Kennesaw State University Grand Challenges Grant EXTERNAL REVIEWER	2024
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IEEE Transactions on Visualization and Computer Graphics JOURNAL	2024-2026
International Symposium on Mixed and Augmented Reality CONFERENCE & JOURNAL PROCEEDINGS	2023-2025
ACM Symposium on Virtual Reality Software and Technology CONFERENCE PROCEEDINGS	2023
ACM CHI Conference on Human Factors in Computing Systems CONFERENCE PROCEEDINGS - OUTSTANDING REVIEW AWARD	2022-2025
IEEE Conference on Virtual Reality and 3D User Interfaces JOURNAL & CONFERENCE PROCEEDINGS	2019-2025
Taylor and Francis Ergonomics JOURNAL	2018-2025