

Logan Lane

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SUMMARY

- Third year Ph.D student at Virginia Tech researching collaborative, after-action review systems using AR/VR technologies
- Leveraged Unity, C#, and Photon/Normcore Networking technologies to design and implement networked AR/VR experiences, enabling real-time collaborative interactions for research projects
- Prior experience managing diverse groups of students while an undergraduate and graduate student

EDUCATION

Virginia Tech

Ph.D. in Computer Science and Applications advised by Doug A. Bowman

Blacksburg, VA, USA

Aug. 2021–Current

Virginia Tech

MS in Computer Science and Applications advised by Doug A. Bowman

Blacksburg, VA, USA

Aug. 2021–May 2024

University of Virginia's College at Wise

B.S. in Management and Information Systems - 3.4/4.0 GPA

Wise, VA, USA

May. 2018–May 2021

EXPERIENCE

NASA

Human Factors Engineer Intern

Huntsville, AL, USA

June. 2024–Aug. 2024

- Used VR to simulate lighting conditions on the south pole of the Moon for astronaut training simulation
- Developed interactions for Lunar sample collection and shuttle inspection in VR training simulation

Virginia Tech

Graduate Research Assistant

Blacksburg, VA, USA

May. 2022–Current

- Conducted research under the supervision of Doug A. Bowman, specifically investigating collaborative, after-action review systems in VR
- Also conducted research through a grant from the Office of Naval Research investigating interaction performance models in VR/AR
- Generated prototype applications using C#, Unity, and Photon/Normcore Networking technologies

University of Virginia

ACCORD Intern

Remote

May. 2020–Jul. 2021

- Co-founded DevHub@Wise, a student software development community
- Worked as project lead of InAttendance, an attendance app for the UVA Wise campus built using Swift
- Collaborated with UVA administration and other interns to develop grant proposal for over \$40,000 of DevHub@Wise funding

SKILLS

- **Programming Languages:** C#, Python, Swift, C++, SQL, Kotlin
- **Development Tools:** Unity 3D, Photon PUN/Fusion, Normcore, Git, Xcode, Android Studio

PROJECTS

- **Collaborative, Virtual Reality after-action review system for American football (2024)**
 - Implemented a VR Unity application that allows two or more people to review football game footage immersively in VR.
- **Augmented Reality Table-Top Football Experience (2023)**
 - Implemented an AR Unity application that recreates live NFL games in tabletop format by leveraging player movement data.
- **PlayStation VR Trophy Room (2022)**
 - Developed a Unity program that allows users to interact with their PlayStation trophy collection in VR
- **Remote Collaboration System for Meta Quest 2 (2022)**
 - Developed a remote, simulated augmented reality collaboration system for the Meta Quest 2
- **Virtual Loupes Augmented Reality Microsurgery Aid (2022)**
 - Extended functionality of existing virtual loupes prototype by porting software to the Varjo XR3
- **A Digital Twin Based Approach to Smart Lighting Design (2022)**
 - Developed methods and techniques to support smart lighting design in an immersive virtual reality experience
- **TweetCSVAnnotator (2021)**
 - Developed utility to rapidly annotate CSV entries for hate-speech detection algorithm using Swift

PUBLICATIONS

- [1] **L. Lane**, A. Giovannelli, I. Tahmid, F. Rodrigues, C. Ilo, D. Hsu, C. Lougiakis, S. Davari, and D. A. Bowman, “The alchemist: A gesture-based 3d user interface for engaging arithmetic calculations”, in *IEEE 2024*, 2024.
- [2] A. Giovannelli, F. Rodrigues, S. Davari, I. A. Tahmid, **L. Lane**, C. Connor, K. Davidson, G. N. Ramirez, B. David-John, and D. A. Bowman, “Clue hog: An immersive competitive lock-unlock experience using hook on go-go technique for authentication in the metaverse”, in *IEEE VR 2023*, 2023.
- [3] A. Giovannelli, J. Thomas Jr., **L. Lane**, F. Rodrigues, and D. A. Bowman, “Gestures vs. emojis: Comparing non-verbal reaction visualizations for immersive collaboration”, in *ISMAR 2023*, 2023.
- [4] J. Thomas, S. W. Lee, A. Giovannelli, **L. Lane**, and D. Bowman, “A communication-focused framework for understanding immersive collaboration experiences”, in *ISMAR 2023*, 2023.
- [5] E. Mohammadrezaei, A. Giovannelli, **L. Lane**, and D. Gračanin, “A digital twin based approach to smart lighting design”, in *2022 Winter Simulation Conference (WSC)*, 2022.

SCHOLARSHIPS AND AWARDS

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| • UVA Wise Unsung Hero Award | 2021 |
| • TICE Total Achievement Award | 2020 |
| • Dr. Anne Crum Student Leadership Award | 2015 |