

# Rishi Vanukuru

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## RESEARCH SUMMARY

My goal is to support people as they make meaning and memories while collaborating across distance, time, and devices. Space, and spatial interaction, is a crucial aspect of how meaning and memories are made in everyday life. Through my research, I explore how we can maximize the potential of everyday devices like mobile phones and tablets for spatial computing, and study how this changes the way people work together in hybrid environments.

**Keywords:** Human-Computer Interaction, Collaboration, Creativity, Embodied Interaction, Spatial Computing, Augmented and Virtual Reality, Remote Communication, Mobile Devices.

Last updated November 2024.

## EDUCATION

- 2022– **University of Colorado Boulder**  
Ph.D. in Creative Technology & Design
- 2018–20 **Indian Institute of Technology Bombay**  
M.Des. in Interaction Design
- 2014–18 **Indian Institute of Technology Bombay**  
B.Tech. in Civil Engineering  
Minor in Design

## RESEARCH EXPERIENCE

- SPRING 2022 – PRESENT **ATLAS Institute, University of Colorado Boulder**  
Graduate Research Assistant  
Advisor: Dr. Ellen Yi-Luen Do  
*Supporting Creativity and Collaboration with Mobile Spatial Computing*
- SUMMER 2024 **Microsoft Research, Cambridge, UK**  
Research Intern  
Advisor: Dr. Sean Rintel  
*Supporting Intentionality Across Meetings: Generative AI tools for Retrospection and Prospection*
- SUMMER 2023 **Ericsson Research, USA**  
Research Intern  
Advisor: Dr. Greg Phillips  
*Systems for Network-adaptive Augmented Reality Remote Communication*
- FALL 2020 – SPRING 2021 **IDC School of Design, IIT Bombay**  
Research Associate  
Advisor: Dr. Jayesh Pillai  
*Supporting Remote Learning with Mobile Augmented Reality*
- SUMMER 2019 **Laval Virtual Institute, Arts et Métiers, France**  
Research Intern  
Advisor: Dr. Simon Richir  
*Studying Creativity and Design in Virtual Reality*

## SELECTED PUBLICATIONS

### Journal & Conference Articles

- 2023 **Rishi Vanukuru**, Suibi Che-Chuan Weng, Krithik Ranjan, Torin Hopkins, Amy Banic, Mark D. Gross, Ellen Yi-Luen Do. “DualStream: Spatially Sharing Selves and Surroundings using Mobile Devices and Augmented Reality” In: *IEEE International Symposium on Mixed and Augmented Reality, ISMAR 2023*. doi:10.1109/ISMAR59233.2023.00028
- 2022 S. Sandra Bae, **Rishi Vanukuru**, Ruhan Yang, Peter Gyory, Ran Zhou, Ellen Yi-Luen Do, and Danielle Albers Szafir. “Cultivating Visualization Literacy for Children Through Curiosity and Play.” In: *IEEE Transactions on Visualization and Computer Graphics*, 2022. doi:10.1109/TVCG.2022.3209442
- 2022 Torin Hopkins, Suibi Che-Chuan Weng, **Rishi Vanukuru**, Emma Wenzel, Amy Banic, Mark D. Gross, and Ellen Yi-Luen Do. “AR Drum Circle: Real-Time Collaborative Drumming in AR.” In: *Frontiers in Virtual Reality*, 91. doi:10.3389/frvir.2022.847284
- 2022 Torin Hopkins, Suibi Che-Chuan Weng, **Rishi Vanukuru**, Emma Wenzel, Amy Banic, and Ellen Yi-Luen Do. “Studying the Effects of Network Latency on Audio-Visual Perception During an AR Musical Task.” In: *IEEE International Symposium on Mixed and Augmented Reality, ISMAR 2022*. doi:10.1109/ISMAR55827.2022.00016
- 2021 Sylvain Fleury, **Rishi Vanukuru**, Charles Mille, Killian Poinot, Aurélien Agnès, and Simon Richir. “CRUX: A Creativity and User Experience model.” In: *Digital Creativity*, 32:2 (pp. 116-123). doi:10.1080/14626268.2021.1915339
- 2020 Sylvain Fleury, Aurélien Agnès, **Rishi Vanukuru**, Emma Goumillout, Nicolas Delcombel, and Simon Richir. “Studying the Effects of Visual Movement on Creativity.” In: *Thinking Skills and Creativity*, 36, 100661. doi:10.1016/j.tsc.2020.100661

### Short Papers, Posters, & Demos

- 2024 **Rishi Vanukuru** and Ellen Yi-Luen Do. “Spatial Mobile Memories: Recording and Sharing Everyday Moments using Mobile Augmented Reality.” In: *Proceedings of the 2024 ACM International Conference on Interactive Media Experiences (IMX '24)*. doi:10.1145/3639701.3661087
- 2023 Torin Hopkins, **Rishi Vanukuru**, Suibi Che-Chuan Weng, Chad Tobin, Amy Banic, Mark D. Gross, Ellen Yi-Luen Do. “XR Jam: Design Considerations for Music Networking with AI in XR.” In: *2024 IEEE International Conference on Artificial Intelligence and eXtended and Virtual Reality (AIxVR)*. doi:10.1109/AIxVR59861.2024.00021
- 2020 **Rishi Vanukuru**, Amarnath Murugan, and Jayesh Pillai. “Dual Phone AR: Using a Second Phone as a Controller for Mobile Augmented Reality.” In: *Adjunct Publication of the 33rd Annual ACM Symposium on User Interface Software and Technology (UIST '20 Adjunct)*. doi:10.1145/3379350.3416139
- 2020 **Rishi Vanukuru**. “Accessible Spatial Audio Interfaces: A Pilot Study into Screen Readers with Concurrent Speech.” In: *Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems (CHI EA '20)*. doi:10.1145/3334480.3381440

### Workshop Papers

- 2023 **Rishi Vanukuru**, Ellen Yi-Luen Do. “Exploring the use of Mobile Devices as a Bridge for Cross-Reality Collaboration” In: *IEEE ISMAR 2023 Joint Workshop on Cross-Reality*. [paper]
- 2022 **Rishi Vanukuru**, Amarnath Murugan, Jayesh Pillai, and Ellen Yi-Luen Do. “Designing and Studying Social Interactions in Shared Virtual Spaces using Mobile Augmented Reality.” In: *ACM CHI 2022 Workshop on Social Presence in Virtual Event Spaces*. [paper]
- 2021 Amarnath Murugan, **Rishi Vanukuru**, and Jayesh Pillai. “Towards Avatars for Remote Communication using Mobile Augmented Reality.” In: *IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)* (pp. 135-139). doi:10.1109/VRW52623.2021.00032

## AWARDS

- 2022 Dr. Awtar and Teji Singh Graduate Fellowship (\$20,000)
- 2022 SIGCHI Gary Marsden Travel Award (\$1,200)
- 2020 Institute Silver Medal, IIT Bombay (*1<sup>st</sup> rank in the M.Des program*)
- 2020 1<sup>st</sup> Position, CHI Student Research Competition (*Graduate category*)

## TEACHING & SERVICE

- Co-Instructor** Introduction to Virtual Reality (2022)
- Teaching Assistant** Design for Virtual Reality (2019-2021), Engineering Mechanics (2018)
- Organizing Committee** Lead for Virtual Operations, IndiaHCI 2020
- Reviewer** CHI 2024, DIS 2024, CHI 2023, INTERACT 2023, CHI 2021 Student Research Competition
- Student Volunteer** UIST 2020, IndiaHCI 2019, TypoDay 2019
- Student Mentor** Indian Institute of Technology Bombay, 2016–2018