

# Application Report for Venkatakrisnan,Rohith

General Information	
<b>Name</b>	Venkatakrisnan,Rohith
<b>Applicant ID</b>	662438
<b>Applicant Type</b>	External Applicant
<b>Applicant Status</b>	010 Active
<b>Job Opening</b>	48159 - FELLOW, POST DOCTORAL

Contact Information	
<b>Name Prefix</b>	
<b>First Name</b>	Rohith
<b>Middle Name</b>	
<b>Last Name</b>	Venkatakrisnan
<b>Name Suffix</b>	
<b>Address</b>	407 Upper Highland Drive Clemson, SC 29631 Pickens
<b>Preferred Contact</b>	Not Specified

Phone Numbers				
Phone Type	Telephone	Extension	Country Code	Preferred
Home	978/276-4484			Yes

Email Addresses		
Email Type	Email Address	Preferred
Home	rohithv@clemson.edu	Yes

Referral Sources	
<b>How did you learn of the job?</b>	JobPosting
<b>Additional Information</b>	Columbia
<b>Specific Referral Source</b>	

Education Level	
<b>Highest Education Level</b>	Not Indicated

Degrees	
<b>Degree</b>	Bachelor's Degree 1 (BACHELOR)
<b>School Name</b>	Anna University
<b>Degree</b>	Master of Science (MS)
<b>School Name</b>	Clemson University
<b>Degree</b>	Doctor of Philosophy (PHD)
<b>School Name</b>	Clemson University

Questionnaire		
<b>Additional Questions:</b>		
<b>Question:</b> Are you currently authorized to work in the United States?		
<b>Answers</b>		
<b>Possible Answer</b>	<b>Correct Answer</b>	<b>Selected Answer</b>
Yes	✓	✓
No		
<b>Question:</b> Will you now or in the future require visa sponsorship for employment at the University of Missouri-Columbia or UM System?		
Note: In compliance with federal law, all persons hired will be required to verify identity and eligibility to work in the United States and to complete the required employment eligibility verification document form upon hire.		
<b>Answers</b>		
<b>Possible Answer</b>	<b>Correct Answer</b>	<b>Selected Answer</b>
Yes	✓	✓
No	✓	



# ROHITH VENKATAKRISHNAN

 CLEMSON, SC 29631  1-978-276-4484  rohithv@clemson.edu

## Website

<https://rohithv.myportfolio.com>

## Professional Summary

I am an aspiring *human-centered* computer scientist who is passionate about better bridging the gap between people and interactive computing systems. I study how users perceive *virtual, augmented, and mixed-reality experiences* towards iteratively improving the overall user experience associated with these *extended reality (XR)* technologies. I specialize in researching the affliction of motion sickness experienced in virtual reality (VR), aiming to mitigate its undesirable effects on the VR experience. Outside of this, I have conducted XR research in areas that include virtual object interactions; perceptions of sound, distance, size, and temperature; self-avatars and virtual humans; VR-writing; and educational applications with tangible entities. My wide-ranging research interests have enabled me to successfully collaborate with scholars and experts from a host of interdisciplinary fields spanning psychology, education sciences, neuroscience, computer vision and graphics, digital production arts, and tangible interface innovation. Through such collaborative research, I aim to iteratively improve user experience and fast-track the ubiquity of emerging interactive technologies.

## Education

### Ph.D.: Human Centered Computing

Clemson University

GPA: 3.94

Advisor: Dr. Sabarish V. Babu

Aug 2023

Clemson, SC

### Master of Science: Computer Science (Interactive Computing)

Clemson University

GPA: 4.0

Advisor: Dr. Mark K. Smotherman

May 2018

Clemson, SC

### Bachelor of Science: Computer Sciences and Engineering

Anna University

GPA: 3.7

May 2016

Chennai, IND

## Skills

- Experimental Design
- Quantitative Analyses (R, SPSS, Mplus)
- Qualitative Methods (Interviews, Focus Groups)
- Technical Writing (Latex)
- 3D Modeling, Animation, and Game Development (Unity, Maya, Blender)
- Programming (C#, Python, Java)
- Prototyping & UI Design (Adobe XD, Figma)

## Experience

### Research Assistant

Jan 2020 - Current

Clemson University, School of Computing

Clemson, SC

- Conceptualized, designed, and developed experimental test beds to evaluate user experience in XR.
- Conducted studies, gathered, stored, and maintained data from research participants obtained from surveys, physiological sensors, simulations, and interviews.
- Analyzed, interpreted, published, and presented findings in reputed journals and conferences.
- Worked collaboratively with interdisciplinary teams of experts.

### Teaching Assistant

Jan 2019 - Current

Clemson University, School of Computing

Clemson, SC

Conceptualized exercises, presented tutorials, evaluated assignments, and provided supplemental instruction to 50-100 student classes. Also managed semester-long group projects towards successful completion and demonstration for the following courses:

- Virtual Reality Systems (CPSC 4110/6110)
- Human-Computer Interaction (CPSC 4140/6140)
- Advanced Data Structures (CPSC 8380)
- Database Management Systems (CPSC 4620/6620)

### IT Systems Administrator

Aug 2016 - Dec 2018

Clemson University, School of Computing

Clemson, SC

Helped maintain IT infrastructure for macOS and Windows operating systems for all research and public lab machines used by faculty, staff, and students in the School of Computing.

### Software Engineering Intern

Jan 2016 - Jul 2016

Department Of Defense, Bharat Electronics Limited

Hyderabad, IND

Worked on the front-end development of a reconnaissance and direction-finding tool that leveraged a target triangulation algorithm to detect military threats.

## Software Developer Intern

May 2015 - Jul 2016

Nishtha Technologies

Chennai, IND

Developed a productivity management web application to analyze staff performance on medical transcription efficacy and efficiency.

## Affiliations

Member, Phi Kappa Phi Honor Society for Academic Excellence (2017-Present)

Member, Institute of Electrical and Electronics Engineers (IEEE) (2019-Present)

Member, Association for Computing Machinery (ACM) (2020-Present)

Member, American Psychological Association (APA) (2023-Present)

## Refereed Journal Articles

- **Venkatakrishnan, R.**, Venkatakrishnan, R., Raveendranath, B., Sarno, D. M., Robb, A. C., Lin, W. C., & Babu, S. V. (2023). The Effects of Auditory, Visual, and Working Memory Distractions on Cybersickness in Virtual Reality. *IEEE Transactions on Visualization and Computer Graphics*.
- Venkatakrishnan, R., **Venkatakrishnan, R.**, Raveendranath, B., Pagano, C. C., Robb, A. C., Lin, W. C., & Babu, S. V. (2023). Give Me a Hand: Improving the Effectiveness of Near-field Augmented Reality Interactions By Avatarizing Users' End Effectors. *IEEE Transactions on Visualization and Computer Graphics*.
- Venkatakrishnan, R., **Venkatakrishnan, R.**, Raveendranath, B., Pagano, C. C., Robb, A. C., Lin, W. C., & Babu, S. V. (2023). How Virtual Hand Representations Affect the Perceptions of Dynamic Affordances in Virtual Reality. *IEEE Transactions on Visualization and Computer Graphics*.
- Bhargava, A., **Venkatakrishnan, R.**, Venkatakrishnan, R., Lucaites, K., Solini, H., Robb, A. C., ... & Babu, S. V. (2023). Can I Squeeze Through? Effects of Self-Avatars and Calibration in a Person-Plus-Virtual-Object System on Perceived Lateral Passability in VR. *IEEE Transactions on Visualization and Computer Graphics*.
- \*Venkatakrishnan, R., \***Venkatakrishnan, R.**, Chung, C. H., Wang, Y. S., & Babu, S. (2022). Investigating a combination of input modalities, canvas geometries, and inking triggers on on-air handwriting in virtual reality. *ACM Transactions on Applied Perception*, 19(4), 1-19.
- Bhargava, A., Venkatakrishnan, R., **Venkatakrishnan, R.**, Solini, H., Lucaites, K. M., Robb, A., ... & Babu, S. (2021). Did I Hit the Door Effects of Self-Avatars and Calibration in a Person-Plus-Virtual-Object System on Perceived Frontal Passability in VR. *IEEE Transactions on Visualization and Computer Graphics*.
- Lucaites, K. M., Venkatakrishnan, R., Bhargava, A., **Venkatakrishnan, R.**, & Pagano, C. C. (2020). Predicting aperture crossing behavior from within-trial metrics of motor control reliability. *Human Movement Science*, 74, 102713.
- Lucaites, K.M., Venkatakrishnan, R., **Venkatakrishnan, R.**, Bhargava, A. and Pagano, C.C., 2020.

Predictability and Variability of a Dynamic Environment Impact Affordance Judgments. *Ecological Psychology*, pp.1-20.

- \*Lin, Y. X., \***Venkatakrishnan, R.**, Venkatakrishnan, R., Ebrahimi, E., Lin, W. C., & Babu, S. V. (2020). How the presence and size of static peripheral blur affects cybersickness in virtual reality. *ACM Transactions on Applied Perception (TAP)*, 17(4), 1-18.
- Volonte, M., Anaraky, R.G., **Venkatakrishnan, R.**, Venkatakrishnan, R., Knijnenburg, B.P., Duchowski, A.T. and Babu, S.V., 2020. Empirical evaluation and pathway modeling of visual attention to virtual humans in an appearance fidelity continuum. *Journal on Multimodal User Interfaces*, pp.1-11.

\* **equal contribution**

## Refereed Conference Proceedings

- Bhargava, A., Venkatakrishnan, R., **Venkatakrishnan, R.**, Solini, H., Lucaites, K. M., Robb, A., Pagano, C., & Babu, S. (2023). Empirically Evaluating the Effects of Eye Height and Self-Avatars on Dynamic Passability Affordances in Virtual Reality. In *2023 IEEE Conference on Virtual Reality and 3D User Interfaces (VR)*. IEEE. (Accepted for Publication)
- Lin, W. Y., Wang, Y. C., Wu, D. R., **Venkatakrishnan, R.**, Venkatakrishnan, R., Ebrahimi, E., ... & Lin, W. C. (2022, March). Empirical Evaluation of Calibration and Long-term Carryover Effects of Reverberation on Egocentric Auditory Depth Perception in VR. In *2022 IEEE Conference on Virtual Reality and 3D User Interfaces (VR)* (pp. 232-240). IEEE.
- \*Huang, Y. H., \*Venkatakrishnan, R., **Venkatakrishnan, R.**, Babu, S. V., & Lin, W. C. (2021, September). Using Audio Reverberation to Compensate Distance Compression in Virtual Reality. In *ACM Symposium on Applied Perception 2021* (pp. 1-10).
- Hsu, C. H., Chung, C. H., **Venkatakrishnan, R.**, Venkatakrishnan, R., Wang, Y. S., & Babu, S. V. (2021, March). Comparative Evaluation of Digital Writing and Art in Real and Immersive Virtual Environments. In *2021 IEEE Virtual Reality and 3D User Interfaces (VR)* (pp. 1-10). IEEE.
- de Siqueira, A. G., **Venkatakrishnan, R.**, Venkatakrishnan, R., Bhargava, A., Lucaites, K., Solini, H., ... & Babu, S. V. (2021, March). Empirically Evaluating the Effects of Perceptual Information Channels on the Size Perception of Tangibles in Near-Field Virtual Reality. In *2021 IEEE Virtual Reality and 3D User Interfaces (VR)* (pp. 1-10). IEEE.
- Gomes de Siqueira, A., Bhargava, A., **Venkatakrishnan, R.**, & Venkatakrishnan, R. (2021, February). PPCards: Toward Enhancing Electronic Prototyping with Editions of a Card-based Platform. In *Proceedings of the Fifteenth International Conference on Tangible, Embedded, and Embodied Interaction* (pp. 1-11).
- Venkatakrishnan, R., **Venkatakrishnan, R.**, Bhargava, A., Lucaites, K., Solini, H., Volonte, M., ... & Lin, Y. X. (2020, March). Comparative evaluation of the effects of motion control on cybersickness in immersive virtual environments. In *2020 IEEE Conference on Virtual Reality and 3D User Interfaces (VR)* (pp. 672-681). IEEE.
- **Venkatakrishnan, R.**, Venkatakrishnan, R., Anaraky, R. G., Volonte, M., Knijnenburg, B., & Babu, S.

V. (2020, March). A structural equation modeling approach to understand the relationship between control, cybersickness and presence in virtual reality. In *2020 IEEE Conference on Virtual Reality and 3D User Interfaces (VR)* (pp. 682-691). IEEE.

\* **equal contribution**

## Peer-Reviewed Posters

- Lin, Y. X., Babu, S. V., **Venkatakrishnan, R.**, Venkatakrishnan, R., Wang, Y. C., & Lin, W. C. (2020, March). Towards an Immersive Virtual Simulation for Studying Cybersickness during Spatial Knowledge Acquisition. In *2020 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)* (pp. 624-625). IEEE.
- Lucaites, K., **Venkatakrishnan, R.**, Venkatakrishnan, R., Bhargava, A., & Pagano, C. C. (2019, November). Perceptions of Passability Through Dynamically Moving Gaps. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 63, No. 1, pp. 1941-1942). Sage CA: Los Angeles, CA: SAGE Publications.
- **Venkatakrishnan, R.**, Bhargava, A., Venkatakrishnan, R., Lucaites, K. M., Volonte, M., Solini, H., ... & Babu, S. V. (2019, March). Towards an immersive driving simulator to study factors related to cybersickness. In *2019 IEEE Conference on Virtual Reality and 3D User Interfaces (VR)* (pp. 1201-1202). IEEE.

## Articles Under Review

- **Venkatakrishnan R.**, Venkatakrishnan R., Raveendranath, B., Sarno, D., & Babu, S. The Effects of Time-Gated Distractions on Cybersickness in Virtual Reality. *IEEE Transactions on Visualization and Computer Graphics*. (Under Review)
- \*Lin W., \***Venkatakrishnan R.**, Venkatakrishnan R., Pagano, C., Babu S., & Lin W.C. (2023). Deaf Walking: Measurement and Calibration Using a Novel Action-based Absolute Distance Estimation Method for Egocentric Auditory Depth Perception in Virtual Reality. *IEEE transactions on visualization and computer graphics*, (Under Review)
- Tolchinsky, M., **Venkatakrishnan R.**, Venkatakrishnan, R., Pagano, C., & Babu, S. Effects of Visuo-Auditory Perceptual Information on Head Oriented Tracking of Dynamic Objects in VR. *ACM Transactions on Applied Perception*. (Under Review)

\* **equal contribution**

## Presentations

- Roshan Venkatakrishnan and **Rohith Venkatakrishnan**. Joint presentation on the paper titled "Give Me a Hand: Improving the Effectiveness of Near-field Augmented Reality Interactions By Avatarizing Users' End Effectors". In *Proceedings of the IEEE Conference on Virtual Reality and 3D User Interfaces (VR)*. 2023.

- Roshan Venkatakrishnan and **Rohith Venkatakrishnan**. Joint presentation on the paper titled "How Virtual Hand Representations Affect the Perceptions of Dynamic Affordances in Virtual Reality". *In Proceedings of the IEEE Conference on Virtual Reality and 3D User Interfaces (VR)*. 2023.
- Roshan Venkatakrishnan and **Rohith Venkatakrishnan**. Joint presentation on the paper titled "Investigating a combination of input modalities, canvas geometries, and inking triggers on on-air handwriting in virtual reality". *In Proceedings of the ACM Symposium on Applied Perception (SAP)*. 2022.
- **Rohith Venkatakrishnan**. Presented the paper titled "Comparative Evaluation of Digital Writing and Art in Real and Immersive Virtual Environments". *In Proceedings of the IEEE Conference on Virtual Reality and 3D User Interfaces (VR)*. 2021.
- **Rohith Venkatakrishnan** and Roshan Venkatakrishnan. Joint presentation on the paper titled "How the presence and size of static peripheral blur affects cybersickness in virtual reality". *In Proceedings of the ACM Symposium on Applied Perception (SAP)*. 2020.
- **Rohith Venkatakrishnan**. Presented the paper titled "A structural equation modeling approach to understand the relationship between control, cybersickness and presence in virtual reality". *In Proceedings of the IEEE Conference on Virtual Reality and 3D User Interfaces (VR)*. 2020.
- **Rohith Venkatakrishnan**. Presented the paper titled "Towards an immersive driving simulator to study factors related to cybersickness". *In Proceedings of the IEEE Conference on Virtual Reality and 3D User Interfaces (VR)*. 2020.

## Honors, Awards and Grants

- **Best Paper Award** for the paper titled "How Virtual Hand Representations Affect the Perceptions of Dynamic Affordances in Virtual Reality" (IEEE Conference on Virtual Reality and 3D User Interfaces, Shanghai, 2023)
- **Honorable Mention** for the Best Paper Award for the paper titled "Give Me a Hand: Improving the Effectiveness of Near-field Augmented Reality Interactions By Avatarizing Users' End Effectors (IEEE Conference on Virtual Reality and 3D User Interfaces, Shanghai, 2023)
- **Best Paper Award** for the paper titled " Investigating a combination of input modalities, canvas geometries, and inking triggers on on-air handwriting in virtual reality " (ACM Symposium on Applied Perception, 2022)
- **Nominated** for the Outstanding Graduate Teaching Assistant Award (Graduate School, Clemson University, 2022)
- **Best Presentation Award** for the paper titled "Using Audio Reverberation to Compensate Distance Compression in Virtual Reality" (ACM Symposium on Applied Perception, 2021)
- **Best Paper Award** for the paper titled "How the Presence and Size of Static Peripheral Blur Affects Cybersickness in Virtual Reality" (ACM Symposium on Applied Perception, 2020)



- **Honorable Mention** for the Best Presentation Award - "How the Presence and Size of Static Peripheral Blur Affects Cybersickness in Virtual Reality (ACM Symposium on Applied Perception, 2020)
- **Most Interesting Demo Award** - "ROW VR- Can Competing with Someone Make You Perform Better?" (Virtual Reality Systems Course-Clemson University, 2018)
- **Clemson University Grants:**
  - Tiger Grant** (\$15000) - Awarded for the study of Thermoception in XR Environments (2020)
  - Human Factors Institute Grant** - Awarded for Human Factors Research Projects (2019, 2020)
  - Graduate Travel Grant** - Awarded (2019, 2020, 2021, 2022, 2023)

## Service

- **Peer Reviewer**
  - Journals:** IEEE TVCG, ACM TAP, Frontiers in VR, Elsevier IJHCS (2020-Current)
  - Conferences:** IEEE VR, ACM SAP (2020-Current)
- **Student Volunteer**, IEEEVR (2019, 2020)
- **Director of Rules and Procedures**, Clemson University Graduate Student Government (2020, 2021)
- **Graduate Student Peer Mentor**, Clemson University Peer Mentorship Program (2021-Current)
- **Virtual Reality Simulation Demonstrations Co-Lead**, Clemson University (2018-Current)
- **Judging Committee**, Clemson University Focus on Creative Inquiry (2023)

## Academic Pursuits

Certificate in Engineering and Science Education, Clemson University (2022)

- Applying research-based current best practices in teaching and mentoring students enrolled in post-secondary STEM disciplines.
- Practical experience in interactive lecturing with active learning strategies, factoring in diversity, equity, and inclusion to broaden participation and improve learning outcomes.

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## **Names and Contact Information of References**

1. Dr. Sabarish Babu (Associate Professor in the School of Computing at Clemson University)  
email: [sbabu@clermson.edu](mailto:sbabu@clermson.edu)

2. Dr. Andrew Robb (Associate Professor in the School of Computing at Clemson University)  
email: [arobb@clermson.edu](mailto:arobb@clermson.edu)

3. Dr. Dawn Sarno (Assistant Professor in the Department of Psychology at Clemson University)  
email: [dmsarno@clermson.edu](mailto:dmsarno@clermson.edu)