RAJSHEKAR G S

@ rajshekhar1997reddy@gmail.com www.rajshekarreddy.com in rajshekarreddy97 Google Scholar

EXPERIENCE

Work Experience

Research Assistant

Intelligent Inclusive Interaction Design Lab, Indian Institute of Science

Mar 2020 – Present Bangalore

- Developing Digital Twins of workspaces in VR, in collaboration with British Telecom.
- Implementing gaze interactions in virtual Aerospace cockpits.
- Generating diverse synthetic data to train object detection models.
- Developed three-dimensional eye-tracker simulations for objectively assessing optimal camera pose.

AR Development Intern

V+S Design Partners

Feb 2019 – Mar 2019 Bangalore

- Developed an AR visualisation framework for architectural BIM data.
- Designed photorealistic interior environments for VR walkthroughs.

Volunteer Experience

Design Head

Apple Developers Group - Ramaiah Institute of Technology

Mar 2019 – Aug 2019 Bangalore

- Oversaw the group's UI/UX and other design activities.

PUBLICATIONS

G. S. Rajshekar Reddy, Prithvi Raj, and Lingaraju G. M. 2020. ***"IIMR: A Framework for Intangible Mid-Air Interactions in a Mixed Reality Environment."*** In Companion Proceedings of the 2020 Conference on Interactive Surfaces and Spaces (ISS '20). ACM, New York, NY, USA, 5155. DOI: https://doi.org/10.1145/3380867.3426203

G. S. Rajshekar Reddy and Lingaraju G. M., ***"A Brain-Computer Interface and Augmented Reality Neurofeedback to Treat ADHD: A Virtual Telekinesis Approach,"*** 2020 IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct), Recife, 2020, pp. 123-128. DOI: 10.1109/ISMAR-Adjunct51615.2020.00045.

G. S. Rajshekar Reddy and Damien C. Rompapas, ***"VisuoTouch: Enabling Haptic Feedback in Augmented Reality through Visual Cues,"*** 2020 IEEE International Symposium on Mixed and Augmented Reality Demonstrations (ISMAR), Recife, 2020. http://ismar20.org/demonstrations/

Abhishek Mukhopadhyay, G. S. Rajshekar Reddy, KamalPreet S. Saluja, L.R.D. Murthy, Anasol Peña-Rios, Gokul Gopal, and Pradipta Biswas, ***"A Virtual Reality-Based System for Automatic Validation of Social Distance Measures,"*** Springer Virtual Reality Special Issue on Augmented and Virtual Reality in the Time of COVID-19.

[Under review]

EDUCATION

B. E. in Information Science and Engineering, GPA: 7.91/10

Ramaiah Institute of Technology

2015 – 2019

RESEARCH INTERESTS

Human-Computer Interaction | Ubiquitous Computing | Neurotech | Assistive Technology | Haptics

MOST PROUD OF

2nd place, BR41N.IO
My team's project, Neospoon, was awarded 2nd place at the global Brain-Computer Interface Hackathon, organised by g.tec and IEEE Brain.

Expert Talk at Unite India 2019
Delivered an Expert Talk on Persistent AR Experiences at Unity's annual developer conference.

VisualizAR, AR Music Visualizer
I developed an AR particle music visualizer, VisualizAR, which is now available on the App Store. Get it here.

SKILLS

Technical
Augmented/Virtual Reality | Interaction Design | Web Design | Computer Graphics | Signal Processing | Brain-Computer Interfaces | Affective Computing | Rapid Prototyping

Creative
Music Theory and Production | Digital Cinematography | Photography | Public Speaking

Programs
C++ | C-sharp | Unity | Matlab | Xcode | Cinema 4D | HTML, CSS, Javascript | Logic Pro X | Adobe XD | Adobe Lightroom

Abhishek Mukhopadhyay, G. S. Rajshekar Reddy, Imon Mukherjee, Gokul Gopal, Anasol Peña-Rios, and Pradipta Biswas, ***"Generating Synthetic Data for Deep Learning using VR Digital Twin."*** In Proceedings of the 26th International Conference on Intelligent User Interfaces Companion (IUI '21).

[Under review]

G. S. Rajshekar Reddy and Damien C. Rompapas, ***"Liquid Hands: Evoking Emotional States via Augmented Reality Music Visualizations."***

[In Preparation]

PROJECTS

A Brain-Computer Interface and Augmented Reality Neurofeedback to Treat ADHD: A Virtual Telekinesis Approach

Aug 2019 - Ongoing

Treatment of ADHD using EEG Neurofeedback and a gamified Augmented Reality experience. Working with NIMHANS, Bangalore to conduct a pilot study.

Liquid Hands: Evoking Emotional States via Augmented Reality Music Visualizations

Feb 2020 - Ongoing

An AR particle music visualizer with hand-particle interactions that aims to evoke emotions akin to those exhibited in live music performances, while also functioning as a stress reliever.

VisuoTouch: Enabling Haptic Feedback in Augmented Reality Through Visual Cues

Aug 2020 - Ongoing

A system that enables the semblance of haptic feedback by providing visual cues. Planning a usability study to assess the psychological responses and improved efficiency of virtual interactions with VisuoTouch.

Augmented Reality Assisted Training of Minimally Invasive Surgical Skills

Sep 2020 - Ongoing

An approach for training Suturing skills through a large field-of-view, optical see-through headset (Project Northstar), with augmented visual cues and force feedback for assistance.

CERTIFICATIONS

- **Interaction Design Specialization - University of California, San Diego via Coursera**
- **Neural Signal Processing and Analysis - Mike X Cohen via Udemy**
- **Computational Neuroscience - University of Washington via Coursera**
- **The Ultimate Guide to Game Development, Real-World Applications and Cinematography with Unity - Unity Technologies via Udemy**
- **Cinema 4D Masterclass - Ozgur Gorgun (Maxon Certified Instructor) via Udemy**
- **Electronic Music Producer Course using Logic Pro X - The Music'scool**

HONORS & AWARDS

- **Invited Workshop on AR Development, Vellore Institute of Technology**
  I was invited by the Vellore Institute of Technology to conduct a workshop on AR development for their students.
- **Letter of Appreciation, Ramaiah Institute of Technology**
  I was given a Letter of Appreciation for conducting workshops on AR and Game development at Ramaiah Institute of Technology.
- **2nd place, BR41N.IO**
  My team's project, Neospoon, was awarded 2nd place at the Global Brain-Computer Interface Hackathon, organized by g.tec Medical Engineering and IEEE Brain. View Project.
- **3rd place & Global Nominee, NASA International Space Apps Challenge**
  My team's project, An educational AR game that allowed users to create their own star system, was awarded 3rd place and the Global Nominee by NASA. View Project.
- **Special Prize, Pan IIT Alumni x Tech4Bharat**
  My team's project, Seeing Eye, an AR app for the visually impaired to navigate indoor spaces using spatial sound from persistent anchors, was awarded a Special Prize. View Project.