# 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.
- 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, Imon Mukherjee, Gokul Gopal, Anasol Peña-Rios, and Pradipta Biswas, ***"Generating Synthetic Data for Deep Learning using VR Digital Twin."*** In Proceedings of the 3rd International Conference on Virtual Reality and Image Processing (VRIP '21).

[Accepted, presenting in Aug 2021]

Abhishek Mukhopadhyay, G. S. Rajshekar Reddy, KamalPreet S. Saluja, L.R.D. Murthy, Anasol Peña-Rios, Gokul Gopal, and Pradipta Biswas, ***"A***

## 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

*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]

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

[In Preparation]

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# 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.

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## 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.

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## 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.

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## 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.

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# 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.

- **Discovery Award, Global Surgical Training Challenge**
  Our team, IntelliVision, was awarded a grant from the Intuitive Foundation for developing cost-effective surgical training modules.

- **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.