Disha Sardana

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EDUCATION

VIRGINIA TECH
Ph.D. in HCI
Graduating Dec 2021 | Blacksburg, VA
Cum. GPA: 3.87

VIRGINIA TECH
MS in Electrical Engineering
Graduated May 2018 | Blacksburg, VA
Cum. GPA: 3.85

LINKS

GitHub: **disha13sardana**
Google Scholar: **publications**
Portfolio: **disha-sardana**

COURSEWORK

Advanced Data Analytics
Statistical Inference
Statistics in Research
Advanced Electromagnetics
Computational Plasma Dynamics
Virtual Environments
Human Computer Systems
Human Centered Design

SKILLS

Programming
• Python • R • MATLAB
• Unity3D • C# • Max/MSP
• HoloLens • Magic Leap • Vuforia
Research Methods
• User-studies • Interview • Focus Group
• Survey • Storyboarding • Ethnography

HONORS

• Received a student presentation award at the AMS 98th Annual Meeting for exceptional research & presentation
• Inducted life member of Phi Kappa Phi
• Invited reviewer for the late-breaking works at CHI 2020, Hawai'i, USA

LEADERSHIP

• **President** | Indian Students Association at Virginia Tech
• **Co-Founder & VP** | Kala - Indian Classical Music Society at Virginia Tech
• **Event Coordinator** | Eta Kappa Nu (IEEE-HKN) Honor Society at VT

RESEARCH

SPATIAL AUDIO DATA IMMERSIVE EXPERIENCE (SADIE)
NSF Funded Project | wvtf-article | vt-news
Aug 2017 – present | Institute for Creativity, Arts, and Technology, VT

- To enable user interaction with immersive sound environments, designed a new motion tracking glove that allows physical control of a high-density, 3-dimensional array of speakers
- Programmed the logic to recognize 3-dimensional gestures (such as pinch, zoom etc.) from real-time coordinates of various glove elements.
- Conducted user-studies with over **150 users** (till date) to study human perception of sound in an immersive multi-layered auditory environment
- Performed hypothesis testing and statistical analysis on user-data, leading to four publications in prestigious audio-related conferences

QUANTIFICATION OF EFFECT OF SOLAR STORMS ON TEC OVER U.S. SECTOR USING MACHINE LEARNING
Masters Thesis | Award from American Meteorological Society
Jan 2016 – May 2018 | Center for Space Science and Engineering Research, Virginia Tech

- Studied the strength of influence of various solar storm parameters on the Total Electron Content (TEC), a key indicator of the state of the ionosphere, using tree-based machine learning techniques
- Used AWS, Python and Scikit Learn to build a pipeline to fetch and ingest massive amounts of ionospheric data (order of 10s of GBs) to train and test machine learning model
- Computed parameter importances from a Random Forest model with OOB score 0.74789

PROJECTS

HCI EXPERIENCE
Jan 2019 - present | Center for Human-Computer Interaction, Virginia Tech

- Used Microsoft HoloLens and MRTK toolkit to prototype a use case in **immersive data analytics** context to enable embodied data exploration in mixed reality environments
- Demonstrated the developed prototype at **ICAT Creativity and Innovation Day** and collected feedback from over 20 users
- Designed and prototyped an "Interactive Augmented Reality Board Game for Recruiting Prospective Students" using research methods such as focus groups, semi-structured interviews, personas, formative evaluation and usability-studies.
- Took lead in developing the AR component of the game using Vuforia and Unity3D.
- Work won the **best poster award** at the Center for Human-Computer Interaction Student Symposium, Blacksburg, VA, May, 2019

WORK EXPERIENCE

INTERN
Summer '17 | Advanced Research Computing Lab, Virginia Tech

- Developed an interactive, immersive 3D web front-end to enable rapid visualization of safety implications of various storage configurations of used nuclear fuel rods