

# Disha Sardana

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## EDUCATION

### VIRGINIA TECH

PH.D. IN HUMAN CENTERED DESIGN  
Graduating May 2022 | Blacksburg, VA  
Cum. GPA: 3.86

### VIRGINIA TECH

MS IN ELECTRICAL ENGINEERING  
Graduated May 2018 | Blacksburg, VA  
Cum. GPA: 3.85

## LINKS

Portfolio: [disha-sardana](#)  
Google Scholar: [publications](#)  
Project Links: [wvtf-article](#) | [vt-news](#)

## COURSEWORK

Virtual Environments  
Human Computer Systems  
Human Centered Design  
Advanced Data Analytics  
Statistical Inference  
Advanced Electromagnetics  
Computational Plasma Dynamics  
Remote Sensing and Principles

## 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 International Conference on Auditory Display (2019)

## 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

Aug 2017 – present | Institute for Creativity, Arts, and Technology, Virginia Tech

- 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 exocentric environment

### 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

### AR/VR EXPERIENCE

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

- 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
- Used **Microsoft HoloLens and MRTK toolkit** for another project 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

## 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