

Shreelekha Revankar  
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*I am a 1st year Ph.D. student working in Vision, Graphics and Human-Computer Interaction.*

### **Education:**

- Ph.D., Computer Science, Cornell University, Ithaca (in progress)
  - Advised by Prof. Kavita Bala and Prof. Bharath Hariharan
- Master of Science, Computer Science, University of Maryland, College Park, December 2022
  - Advised by Prof. Ming Lin (GPA: 3.88)
- Bachelor of Science, Computer Science, University of Maryland, College Park, May 2021

### **Publications:**

- **Shreelekha Revankar**, Shijia Liao, Yu Shen, Junbang Liang, Huaishu Peng, Ming Lin, “*SHARE: Single-view Human Adversarial REconstruction*” – CVPR 2024 (to be submitted)
- **Shreelekha Revankar**, Shijia Liao, Yu Shen, Ming Lin, “*FAIR datasets: Fair Augmented Integratable Reconstruction Datasets*” – CHI 2024 (Submitted)
- Laura Zheng, James Mullen, Julio Poveda, **Shreelekha Revankar**, Ming Lin, “*Quantifying Human Driving Behavior through Virtual Reality*”– IROS 2024 (to be submitted)

### **Work Experience:**

#### **Graduate Researcher @ Cornell University**

2023- present

- **Faculty Advisors: Prof. Kavita Bala, Prof Bharath Hariharan**
- **Application of deep learning techniques at a global scale using multi-scale and multi-modal satellite imagery.**
- **Large-scale visual discovery**

#### **Effector Behavior Engineering Intern @ ShieldAI**

2023-2023

- Independently developed and implemented search and relocation algorithms for Hive Minded Vehicular Behavioral Autonomous Teams (VBATs), enabling autonomous task allocation and execution without communication.
- Achieved recognition for the outstanding performance of this work, resulting in its adaptation for integration into fighter jets, enhancing their operational capabilities.

#### **Graduate Researcher @ University of Maryland**

2021- 2023

- **Faculty Advisor: Prof. Ming Lin**
- Adversarial Training Method for Human Body Reconstruction from Images (See publications)
- Gradient-based Application to improve camera positions for image capture to be used in Human Body Reconstruction from images
- Human-Computer Interactions through wearables and handheld devices
- Robustness in Machine Learning

#### **Undergraduate Researcher:**

2020-2021

- **Faculty Advisor: Prof. Ming Lin**
- Augmented Reality and Virtual eCommerce experience research
- Built mobile application which enables virtual try-on clothing experience using human model reconstruction (joint work with Junbang Liang)

#### **FIRE Researcher:**

2017-2018

- Member of Phillips Virtual World team in collaboration with The Phillips Collection modern art museum in Washington D.C.

- Created a 3D AR scavenger hunt to see if augmented and virtual technologies can be used to enhance the experience of a museum visitor.
- Demonstrated 3D-AR using objects in artwork from the Phillips collection.

## Projects:

- Material Recognition for Generalizable Robot Navigation 2023
  - Created a system to embed environment materials into local RL policies. Utilized RL controller policy depending on the environment to facilitate robot navigation in unknown terrains
- Activity Recognition Using Interactive Devices 2021  
([https://www.youtube.com/watch?v=Z0i2CVcvL\\_8](https://www.youtube.com/watch?v=Z0i2CVcvL_8)):
  - Created a holistic system to recognize human activity. For this system, we built a sensor band (accelerometer, gyroscope, orientation, etc.) using an Arduino. This is strapped around the thigh, and works in tandem with a mobile application to collect accelerometer/gyroscope data from the user's phone.
  - The movement data was synced and collected in real-time from both the mobile phone and the sensor band and sent to a firebase database where we trained a model to recognize and display which activity is being performed when the sensor and phone are worn, with an accuracy of 90.14%.
- Correlating Movie Ratings with Cross-Lingual Subtitle Translation Quality 2022
  - Analyzed how the quality of subtitles influences audience perception of foreign language movies, to see if current state-of-the-art Neural machine translation (NMT) models can serve as a viable aide or alternative to professional movie translation.
  - Created a metric to identify Key Scenes of Disagreement (KSD) across the bilingual movie scripts utilizing sentiment analysis, formality detection and lexical features of the text, to find instances where subtitles failed to convey the proper meaning.
- Operation of Amber B1 robot arm to Perform Systematic Tasks 2021
  - Created a framework using Inverse Kinematics to carry out systematic tasks using the Amber B1.
  - Modeled and printed accessories for the Amber B1 robot arm for different attachments such as mobile phones.
- Interactive Graphic Visualizations for Yelp (<https://youtu.be/MdGciiI6qPg>) 2021
  - Implemented interactive data visualizations using Yelp data to improve the comparison and discovery of restaurants.
  - Instead of using the usual search and filter tools followed by lists of restaurants and reviews, our visualizations convey important information faster and with fewer searches and clicks from the user. Our work allows users the ability to easily compare a large group of restaurants, and quickly narrow down to a single restaurant.
- Crowd Sourced Bar Ranking Application 2020  
(<https://www.youtube.com/watch?v=kgwC8KbCRVE>)
  - app to allow users to find bars near them, find information about these bars such as menus and ratings, deals and specials and waiting times for these bars.
  - The app features interactive maps to display closest bars, firebase for user authentication, real-time uploading of images for each bar.
  - Personalized experience via user profile storing bars they've visited, the ratings they've left and their favorite bars' information.
  - Crowd sourced information about wait times and capacity for bars.
- AR Scavenger Hunt for Modern Art at the Phillips Collection 2018-2019  
(<https://youtu.be/sjITaGDTyl8>)
  - Collaboration with the Phillips Collection via FIRE program at UMD during my freshman year
  - Created an AR scavenger hunt app in Unity using artworks from the Phillips Collection in D.C. which proved to enhance the museum visiting experience when tested with 18-20 yr age groups.

**Talks:** Selected to be sole student speaker at the **Fearless Ideas campaign in Atlanta alongside former UMD president Dr. Wallace Loh.** (<https://bsos.umd.edu/event/fearless-ideas-campaign> , <https://drive.google.com/file/d/1gVw6IovYx06fjqoU9gzEalQ3McYf5iIS/view?usp=sharing>)

**Honors:** Dean's List

**Mentoring:**

- *Tech+Research*, Annually lead a project geared towards engaging undergraduate persons of underrepresented genders in computer science research (2021-2022)
  - In 2022 my students **won the research project track**.  
<https://devpost.com/software/measuring-driver-behavior-through-vr-simulation>

**Selected Coursework:**

- Advanced Computer Graphics, Interactive Technologies in HCI, Multilingual NLP, Neural Modeling, Differentiable Programming, Information Visualization
- Computer Vision, Elementary Theory of Computation, Programming Handheld Devices, Intro to Human-Computer Interaction, Computer Networks, Algorithms in Geospatial Computing, Data Science

**Skills:**

- Python, Java, Ruby, Kotlin, C++, C#, C , OCaml
- ML, Computer Graphics, Computer Vision, HCI, NLP, Data Visualization, Interactive Devices