SUSMIJA REDDY JABBIREDDY

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EDUCATION

University of Maryland, College Park — May 2024
Ph.D. Candidate in Computer Science — College Park, MD
Advisor: Prof. Amitabh Varshney — GPA: 4.0/4.0

University of Maryland, College Park — May 2022
Masters in Computer Science — College Park, MD

Indian Institute of Technology, Kharagpur — May 2017
Master of Technology in Computer Science & Engineering — West Bengal, India
Bachelor of Technology (Honors) in Computer Science & Engineering — GPA: 9.3/10
Advisor: Prof. Sourangshu Bhattacharya

SKILL SET

Research	Computer Vision, Computer Graphics, Machine Learning, Deep Learning, AR/VR
Languages and Frameworks	Python, C, C++, Java, MATLAB, Pytorch, Tensorflow, OpenGL
Coursework	Deep Learning, Advanced Numerical Optimization, Computational Linguistics, Image Processing, Advanced Techniques in Visual Learning and Recognition, Foundations of Deep Learning, Advanced Computer Graphics, Machine Learning,Computational Imaging

PUBLICATIONS AND PATENTS

Towards Sparse Invariant Layout for Dynamic Holographic Displays
Susmija Jabbireddy, Yang Zhang, Mario Dagenias, Christopher Metzler, Martin Peckerar, Amitabh Varshney
Under submission

Accelerated Volume Rendering with Volume Guided Neural Denoising
Susmija Jabbireddy, Shuo Li, Xiaoxu Meng, Judith Terrill, and Amitabh Varshney
EuroGraphics Conference on Visualization 2023

VIINTER: View Interpolation With Implicit Neural Representations of Images
Brandon Y. Feng, *Susmija Jabbireddy*, Amitabh Varshney
SIGGRAPH Asia 2022

Sparse Nanophotonic Phased Arrays for Energy-Efficient Holographic Displays
Susmija Jabbireddy, Yang Zhang, Martin Peckerar, Mario Dagenias, Amitabh Varshney
IEEE Conference on Virtual Reality and 3D User Interfaces (VR) 2022

Rectangular Mapping-based Foveated Rendering
Jiannan Ye, Anqi Xie, *Susmija Jabbireddy*, Yunchuan Li, Xubo Yang, Xiaoxu Meng
IEEE Conference on Virtual Reality and 3D User Interfaces (VR) 2022

Foveated Rendering: Motivation, Taxonomy, and Research Directions
Susmija Jabbireddy, Xuetong Sun, Xiaoxu Meng, Amitabh Varshney
arXiv Preprint 2022

Improved Modeling of 3D Shapes with Multi-view Depth Maps
Kamal Gupta*, *Susmija Jabbireddy**, Ketul Shah*, Abhinav Shrivastava, Matthias Zwicker
Oral International Conference on 3D Vision 2020

Task-Specific Representation Learning for Web-Scale Entity Disambiguation
Rijula Kar, *Susmija Reddy*, Sourangshu Bhattacharya, Anirban Dasgupta, Soumen Chakrabarti
Thirty-Second AAAI Conference on Artificial Intelligence, 2018

Extraction of medically interpretable features for classification of malignancy in breast thermography
Himanshu Madhu, Siva Teja Kakileti, Krithika Venkataramani, *Susmija Jabbireddy*
Thirty-Eighth Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 2016

Thermography-based breast cancer screening using a measure of symmetry
Krithika Venkataramani, *Susmija Jabbireddy*, Himanshu J. Madhu, Siva Teja Kakileti, Hadonahalli V. Ramprakash
U.S. Patent 10,307,141

Contour-based determination of malignant tissue in a thermal image
Krithika Venkataramani, *Susmija Jabbireddy*, Himanshu J. Madhu, Siva Teja Kakileti
U.S. Patent 9,865,052

PROFESSIONAL EXPERIENCE

Google, Mountain View, California June 2023 – Aug 2023
Software Engineer Intern, Geo 3D

Digital Terrain Map Estimation
Host: Brett Allen, Software Engineer, Google
- Developed an end-to-end model to estimate terrain from aerial multi-view stereo images.

Google, Mountain View, California June 2022 – Aug 2022
Software Engineer Intern, Geo Pose

Aerial Pose Evaluation
Host: Daniya Zamalieva, Software Engineer, Google
- Developed production level code for aerial pose evaluation system

Mitsubishi Electric Research Laboratories (MERL), Cambridge, Massachusetts May 2021 – May 2022
Research Intern

Exploring Implicit Neural Representations
Host: Michael J. Jones, Senior Principal Research Scientist, MERL
- Explored implicit neural representations for downstream computer vision tasks

Sprinklr, Gurugram, India July 2017 – June 2018
Product Engineer, Machine Learning

Scene Text Detection and Recognition
- Experimented with a two step network - CTPN followed by CRNN to detect text from natural images
- Integrated a single network for detecting and recognizing text into Sprinklr framework with high throughput and efficiency

Brand Logo Detection using Deep Learning
- Integrated FasterRCNN into Sprinklr Framework for recognizing and localizing logos in natural images
- Implemented several data augmentation techniques and filtered noisy images for training

Logo Detection and Recognition
- Worked on logo recognition techniques using visual features from a small number of reference images.
- Implemented an algorithm to precisely identify the location of the logo within the image

Xerox Research Center India, Bangalore, India May 2016 – July 2016
Research Intern, Health Care Analytics May 2015 – July 2015

Classifying Thermographic features for Breast Cancer Screening
Host: Krithika Venkatarmani, Visiting Scientist, Xerox Research Center India
- Designed an algorithm to automatically classify thermographic images for the presence of breast cancer
- Automated detection of suspected malignant locations in different views of the breast image
- Additionally attempted to distinguish between various breast conditions

ACADEMIC EXPERIENCE

Research Assistant - University of Maryland, College Park Jan 2019 – Present
Towards Leveraging Sparsity for Immersive and Interactive 3D Displays

Advisor: Prof. Amitabh Varshney
- Working towards developing fast and efficient algorithms for Computer Generated Holograms (CGH) for VR/AR displays
- Investigating computational approaches to enable the development of efficient large-scale holographic displays

M.Tech Thesis - Indian Institute of Technology, Kharagpur July 2016 – April 2017
Representation Learning and Random Projections for Sparse Data

Advisor: Prof. Sourangshu Bhattacharya
- Experimented with various hashing techniques to achieve dimensionality reduction
- Investigated multi-task representation learning (MTRL) for Named Entity Disambiguation (NED)

B.Tech Project - Indian Institute of Technology, Kharagpur July 2015 – April 2016
Distributed Matrix Operations using Spark

Advisor: Prof. Sourangshu Bhattacharya
- Designed an algorithm to compute the inverse of a high dimension symmetric positive definite matrix
- Implemented the algorithm in Apache Spark in a distributed environment using HDFS for data storage

Detecting Reflective Surfaces from a Single Image Aug 2019 – Dec 2019
Mentor: Prof. Abhinav Shrivatsava *University of Maryland*
- Worked on detecting objects with reflective surfaces using depth discontinuity information

SCHOLASTIC ACHIEVEMENTS

- Finalist for **UMD Innovation of the Year Award**, 2023 for work on Sparse Nanophotonic Arrays for Holographic Displays
- Received the IEEE VR Inclusion, Diversity, and Accessibility Scholarship 2022
- Selected for attending CRA Grad Cohort for Women 2019, 2020
- Recipient of the prestigious University of Maryland, College Park **Dean's Fellowship** for the academic years 2018–2020
- Achieved **Best Master's Thesis Project Award** in IIT Kharagpur for the academic year 2016–2017