

EDUCATION

University of California, Santa Barbara

Santa Barbara, California

PhD in Computer Science (Co-advised by Elizabeth Belding and Arpit Gupta)

Sept 2023–Present

- GPA: 4.0/4.0
- Research focus on Applications of ML and Foundation Models in assessing Internet Broadband access and quality.

Birla Institute of Technology and Science, Pilani

Bachelor of Engineering in Electronics and Communication Engineering

Aug 2019–May 2023

- Minor in Robotics

SCHOLARSHIPS AND AWARDS

- National Science Foundation (NSF) Graduate Research Fellowship (Awarded: April 4th, 2024) 2024–Present
- IRTF-Applied Networking Research Prize (ANRP) 2025

PUBLICATIONS & ARTICLES

1. **H.Manda**, V.Srinivasavaradhan and Others , “The Efficacy of the Connect America Fund in Addressing Internet Access Inequities in the US”, Proceedings of the ACM SIGCOMM 2024 Conference
Analyzed a self-collected novel dataset to audit the ISPs’ self-reported coverage data, to study the broadband plans offered to addresses covered by CAF funding.
Building block for “Amici Curiae Brief in Support of Respondents, Wisconsin Bell v U.S. ex rel. Heath (No.23-1127) (U.S. Oct. 1, 2024)”.
2. **H.Manda**, S.Dash and R.K.Tripathy, “Time-Frequency Domain Modified Vision Transformer Model for Detection of Atrial Fibrillation Using Multi-Lead ECG Signals”, National Conference on Communications (2023) (IEEE co-sponsored)
Developed a modified Vision Transformer based architecture for detecting Heart Conditions. Involves use of signal processing techniques to convert time-series information to an image for classification.
3. **H.Manda**, V.Srinivasavaradhan and Others , “Measuring Broadband Policy Success”, Harvard Law Review Blog (July 16th, 2024)
4. **H.Manda**, V.Srinivasavaradhan and Others , “Measuring Broadband Policy Success in Rural America”, Internet Society Pulse Blog (November 21st, 2024)

WORK EXPERIENCE

University of California, Santa Barbara

Santa Barbara, California

Graduate Student Researcher

Sept 2023-Present

- Foundation Models for Broadband Quality: Developing and testing ML-driven, foundational models to contextualize large-scale broadband speed test data using packet captures
- Scalable Data Collection & Analysis: Co-developed a tool for web-scraping publicly available data using a scalable docker system with Selenium.
- Built data processing pipelines to extract/analyze meaningful information about internet equity. Work has been published in ACM’s SIGCOMM Conference. Languages used: Python

Cisco Systems

Software Engineering Intern at Security Group (40 hours per week)

Aug 2022-Dec 2022

- Enhanced Intrusion Detection: Improved network intrusion detection capabilities of firewall by redesigning installation method of network policy configurations/security package.
- Network Policy Optimization: Improved firewall threat detection system by reducing deployment time and adding performance enhancements. Languages used: Java, Perl, Golang

Idaho National Laboratory

Machine Learning Intern (Post-Irradiation Examination Group)

Idaho Falls, Idaho

June 2024-Sept 2024

- 3D Visualization & Materials Characterization: Designed ML models that utilize ResNet & U-Net on microscopy images for advanced materials analysis, aiding scientific teams in extracting faster and more accurate insights from large datasets.
- Draft publication currently in-progress

Dimaag-AI

Software Developer Intern of AI/ML team (40 hours per week)

May 2022-July 2022

- Computer Vision & Quality Analysis: Non-destructive fruit Quality Analysis using advanced imaging with statistical ML models and instance segmentation of fruits using Mask-RCNN.

TECHNICAL SKILLS

- **Programming Languages:** Python, Java, C, C++, Perl, HTML, Golang, React, JavaScript
- **Machine Learning:** TensorFlow, Keras, Pytorch
- **Big Data:** SQL
- **Tools/Frameworks:** LATEX, Git, Matlab, Spring Boot

TEACHING EXPERIENCE

- Teaching Assistant for Advanced Topics in Internet Computing (Spring 2024)

RESEARCH EXPERIENCE

Network Data Representation (Python, PyTorch)

University of California, Santa Barbara

Member of Research Group

Aug 2022-Jan 2023

- Group Research Project, Evaluation of existing network data/traffic representation methods used for ML based intrusion detection. Designed Python code to evaluate robustness, sparsity and other metrics of these representations, so that data can be fed to a foundation model.

Lung Sound Classification using Dual Vision Transformer Model

Birla Institute of Technology and Science, Pilani

Undergraduate Researcher

Jan 2023-Aug 2023

TALKS AND PRESENTATIONS

Following the Dollars: Measuring the Efficacy of Federal Broadband Funding

Federal Reserve Bank of Dallas Digital Inclusion Research Webinar Series

Invited Speaker

Oct 2024

- Discussed findings from the Connect America Fund project and highlighted broadband access inequities.

The Efficacy of CAF in Addressing Internet Access Inequities in the US

ACM SIGCOMM 2024, Sydney, Australia

Presenter

Aug 2024

- Presented research on ISP service compliance in rural areas and its impact on digital inclusion. Shared insights on policymaking and public engagement.