Sushmita Sarker

sushmitasarkers@unr.edu | Portfolio
Linkedin | GitHub | Google Scholar

Education

University of Nevada, Reno — Reno, NV
Ph.D. in Computer Science — *Aug. 2022 – Dec. 2025*
M.S. in Computer Science — *Aug. 2021 – Dec. 2023*

Gujarat Technological University — Ahmedabad, India
BS in Electronics and Communication Engineering — *Sep. 2013 – Apr. 2017*

Technical Skills

Languages: Python, R, C++, MATLAB, SQL
Deep/Machine Learning Libraries: Tensorflow, Keras, PyTorch, Pandas, Numpy, Matplotlib, Scikit-learn
Research Area: AI for Healthcare, Generative AI, Computer Vision, Pattern Recognition, Applied Machine Learning

Experience

AI/ML R&D PhD Intern — May 2025 – Aug. 2025
Computational Data Science Group, Idaho National Lab — *Idaho Falls, ID*

- Developed advanced algorithms using transformer and diffusion model for open-set recognition of wireless signals.

Graduate Research Assistant — Aug. 2021 – Present
Human-Machine Perception Lab, University of Nevada, Reno — *Reno, NV*

- Conducted research at the intersection of AI and medical imaging, with a focus on invasive mass detection in mammograms.
- Developed advanced algorithms using CNNs, transformers, and cutting-edge GenAI models (e.g., diffusion and consistency models).

Campus Lead-Google Developer Group — Aug. 2024-Aug. 2025
University of Nevada, Reno — *Reno, NV*

Instructor-GRAD 778 — Aug. 2023 – Dec. 2023
University of Nevada, Reno — *Reno,NV*

Lecturer-Cambridge IGCSE A Level — Dec. 2017 – June 2021
South Point School & College — *Dhaka, Bangladesh*

Network Engineer Undergrad Intern — June. 2016 – Aug. 2016
Teletalk BD Ltd — *Dhaka, Bangladesh*

Projects

Enhanced Mass Segmentation Using Optimized U-Net| *Tensorflow* | GitHub

Multi-View Mammogram Classification with Swin-Transformer | *PyTorch* | GitHub

Comprehensive Analysis of 3D Shape Classification and Semantic Segmentation | GitHub

Score-based Diffusion Generative Classifier | *PyTorch* | GitHub

Conditional Diffusion Model for Semantically-Aware 3D Point Cloud Generation | *PyTorch* | GitHub

Unsupervised Anomaly Detection for Multivariate Time Series | *PyTorch* | GitHub

Generating Synthetic tree point clouds for automated part segmentation | *PyTorch*

Selected Publications

Sushmita Sarker, Prithul Sarker, George Bebis, Alireza Tavakkoli, "MV-Swin-T: Mammogram Classification with Multi-view Transformer", IEEE International Symposium on Biomedical Imaging, 2024. Preprint link

Sushmita Sarker, Prithul Sarker, Gunner Stone, Ryan Gorman, Alireza Tavakkoli, George Bebis, Javad Sattarvand, "A Comprehensive Overview of Deep Learning Techniques for 3D Point Cloud Classification and Semantic Segmentation", Machine Vision and Applications 2024. Springer link

Sushmita Sarker, Prithul Sarker, George Bebis, Alireza Tavakkoli, "ConnectedUNets++: Mass Segmentation from Whole Mammographic Images", International Symposium on Visual Computing, 2022. Springer link

Sushmita Sarker, Prithul Sarker, George Bebis, Alireza Tavakkoli, "Can Score-based Generative Modeling Effectively Handle Medical Image Classification?", IEEE International Symposium on Biomedical Imaging, 2025. Preprint link