

Sushmita Sarker

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[Linkedin](#) | [GitHub](#) | [Google Scholar](#)

EDUCATION

University of Nevada, Reno

Ph.D. in Computer Science

Reno, NV

Aug. 2022 – Dec. 2025

University of Nevada, Reno

MS in Computer Science

Reno, NV

Aug. 2021 – Dec. 2023

Gujarat Technological University

BS in Electronics and Communication Engineering

Ahmedabad, India

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

SUMMER INTERNSHIP

AI\ML R&D Summer Intern

Idaho National Lab

May 2025 – Aug. 2025

Idaho Falls, ID

- As an incoming summer intern, I will contribute to the computational data science group by developing advanced neural architectures for open set recognition, enabling the reliable identification of both known and previously unseen wireless signals. These efforts will contribute to building adaptable AI systems that support dynamic spectrum awareness and strengthen the security of next-generation communication systems.

Network Engineer Intern

Teletalk BD Ltd

June. 2016 – Aug. 2016

Dhaka, Bangladesh

- Contributed to field-level testing and optimization of 3G network infrastructure, gaining hands-on experience with core and radio access network.
- Gained hands-on experience with GSM, 4G, SDH, and MGW technologies across core and radio access network.

RESEARCH EXPERIENCE

Graduate Research Assistant

University of Nevada, Reno

Aug. 2021 – Present

Reno, NV

- Conducted research at the intersection of AI and medical imaging, leveraging advanced neural architectures—including CNNs, transformers, and cutting-edge generative models (diffusion and consistency model) to improve invasive mass detection in mammograms.
- Collaborated with the Mining Lab to design and implement a scalable storage repository for high-volume raw datasets, significantly accelerating data accessibility and usability across multi-disciplinary research teams.
- Engineered end-to-end workflows for large-scale 3D photogrammetry using Structure from Motion and Multi-View Stereo, enabling high-fidelity point cloud generation for spatial analytics and environmental modeling.

TEACHING EXPERIENCE

Instructor

University of Nevada, Reno

Aug. 2023 – Dec. 2023

Reno, NV

- Course taught: GRAD 778: Elements of Research Computing
Designed and delivered comprehensive instruction to over 100 graduate students, covering essential research components within the field of computational engineering

Graduate Teaching Assistant

University of Nevada, Reno

Aug. 2021 – Dec. 2021 & Aug. 2022 – Dec. 2022

Reno, NV

- Course: ENGR100

Lecturer

South Point School & College

Dec. 2017 – June 2021

Dhaka, Bangladesh

- Course taught: Cambridge IGCSE A Level Physics

PROJECTS

Enhanced Mass Segmentation from Whole Mammographic Images 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](#)

ACTIVITIES & LEADERSHIP

Lead-Google Developer Group at Campus in UNR current
University of Nevada, Reno *Reno, NV*

- As the Lead, I have organized high-impact events and workshops to foster a collaborative technical community on campus. I led a team in developing innovative projects using Google technologies, while closely collaborating with Google Developer Relations to connect students with industry trends in software development, AI, and ML.

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](#)

Gunner Stone, **Sushmita Sarker**, Jonathan Greenberg, Alireza Tavakkoli, “Generating Synthetic Tree Point Clouds for Deep Learning Applications in Remote Sensing”, International Symposium on Visual Computing, 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](#)

*Prithul Sarker, **Sushmita Sarker**, Nicholas Murray, Alireza Tavakkoli, “A Unified Unsupervised Anomaly Detection Framework for Multivariate Time Series”, under review*

***Sushmita Sarker**, Gunner Stone, Alireza Tavakkoli, “Guided and Unguided Conditional Diffusion Mechanisms for Structured and Semantically-Aware 3D Point Cloud Generation”, under review*

ACADEMIC ACCOLADES

Outstanding Graduate Student Researcher Award University of Nevada, Reno – 2025

- Recognized for exceptional research contributions in AI in healthcare, awarded by the Graduate School and Graduate Student Association.

Nevada Drive Scholar Aug. 2023 – May. 2025

- Selected twice as a Nevada Scholar for the Nevada DRIVE program, promoting Doctoral Research in Innovation, Vision, and Excellence.

Indian Council for Cultural Relations Scholarship Aug. 2013 – Apr. 2017

- Awarded the Fulbright scholarship for undergraduate studies at a prestigious engineering institute in Ahmedabad, India, awarded to students with exceptional academic achievement and leadership potential.

REVIEWING & EDITORIAL SERVICE

Journal Reviewed:

- IEEE Access; Computers & Graphics; Journal of Selected Topics in IET Image Processing; Journal of Selected Topics in Applied Earth Observations and Remote Sensing