

Swarna Chakraborty

✉ swarnachakraborty96@gmail.com ☎ +15123955699 [in](#) LinkedIn [G](#) Github [W](#) Website

Summary

Ph.D. candidate (graduating Spring 2027) in Computer Science at Texas State University, working on perceptual quality assessment of immersive and volumetric media through 3D computer vision and vision-language models. Published at ACM Multimedia, QoMEX, and EUVIP; strong background in computer vision, deep learning, and prior industry software engineering experience. Actively seeking postdoctoral or research-track industry roles.

Education

Texas State University

Phd in Computer Science, CGPA: 4 out of 4

Aug 2023 – present

Chittagong University of Engineering and Technology

Bachelor's in Computer Science, CGPA: 3.46 out of 4

Jun 2021

Research Interest

- 3D Computer Vision and perception
- Immersive media and AR/VR
- Vision Language Models(VLM) and Multimodal AI
- Perceptual Quality Assessment
- Volumetric media like Point clouds, Nerfs, and 3D Gaussian Splatting.

Publications

- **Swarna Chakraborty and Mylène C.Q. Farias**, "MT-DPCQA: A Multimodal Time-aware Learning Approach for No-Reference Dynamic Point Cloud Quality Assessment." In Proceedings of the 33rd ACM International Conference on Multimedia(**ACM MM**), pp. 7113–7122, 2025 [✉](#)
- **Swarna Chakraborty and Mylène C.Q. Farias**, "*A No-Reference Point Cloud Quality Assessment Using Graph Attention Networks and Keypoint Resampling.*" In Proceedings of the 13th European Workshop on Visual Information Processing (**EUVIP '25**) [✉](#)
- **Swarna Chakraborty**, Gabriel De Castro Araújo, Syeda Tasmi Faria, Marcelo M. Carvalho and Mylène C.Q. Farias,DAL-PCQA: Enabling Distortion-Level and [✉](#) Language-Driven Reasoning for Point Cloud [✉](#) Quality Assessment (**Qomex 2026**) [✉](#)

Skills

Technical — Data structures and algorithms, Neural Networks, Transformers, GPU architectures

Programming Languages — Python, Java, C, C++, C#

Machine Learning/Deep Learning Tools — Numpy, Pandas, Scikit-learn, Pytorch, OpenCV, Open3D, TensorFlow

Work Experience

Doctoral Instructional Assistant

Texas State University

Sep 2023 – present

- Conduct lab sessions, explain programming concepts, provide hands-on support to students during lab exercise, grade assignments.

Software Engineer

Enosis Solutions

Aug 2021 – Aug 2023

- Worked on a large-scale cloud-based application using MVC and onion architecture. Conducted requirement analysis, coding, and bug fixes with .Net Core, C#, jQuery, AngularJS, and SQL Server.

Selected Projects

Jute Pest Classification Using Deep Learning Models [✉](#)

- Developed and optimized CNNs, Vision Transformers, and ResNet Hybrids for classifying jute pest images, achieving 98% accuracy through experimentation and tuning.

Accelerating LLM Inference on HPC: A Comparative Study of DeepSpeed and DDP [✉](#)

- Developed strategies to accelerate GPT-2 inference using DeepSpeed and DDP on HPC systems, optimizing throughput, latency, and resource utilization. Demonstrated DeepSpeed's memory efficiency for small setups and DDP's scalability for larger tasks.

Automating Argument Mining: A Comprehensive NLP Approach [↗](#)

- Designed transformer-based models (RoBERTa, Swin Transformer) for argument mining, using advanced preprocessing techniques like SMOTE and PyTorch fine-tuning to enhance performance across key metrics.

Flight Recommendation and Reservation System [↗](#)

- Developed a Django-based website using Python to provide personalized recommendations, leveraging collaborative filtering and machine learning techniques.

Evaluating User Experience in VR-Based Charades: A Comparison with Traditional Digital Platforms

- Evaluated user experience in a VR-based charades game, comparing interaction quality, engagement, and usability against traditional digital platforms like Microsoft Teams through experimental analysis.

Service

Peer Review

- IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)
- ACM International Conference on Multimedia (ACM Multimedia)