Agnibh Dasgupta

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Education

Current	PhD, Computing & Information Science, **University of Nebraska, Omaha**
2018 - 2020	Master of Science, Computer Science, **Utah State University**
2013 - 2017	Bachelor of Technology, Computer Science, **West Bengal University of Technology**

Publications

2025 **Watermarking Language Models through Language Models (IEEE TAI)** *(in press)*
- Built a prompt-based LLM watermarking framework without modifying model weights or data
- Evaluated watermark generation and detection using instruction-tuned LLMs

2025 **MAE-SAM2: Mask Autoencoder-Enhanced SAM2 for Clinical Retinal Vascular Leakage Segmentation (AAO)**
- Trained a classifier on patches of large optic scans to accurately detect areas of leakage

2024 **Enhanced Image Watermarking Through Cross-Attention and Noise-Invariant Domain Learning (Imaging Science: Computer Vision, Image and Signal Processing Pattern Recognition)**
- Improved robustness and scalability of image watermarking under heavy compound noise

2024 **Leveraging Artificial Intelligence (AI) to Enhance CS Instruction (FIE)**
- Utilized multi-modality in deep learning models for mood detection in K-12 classroom videos

2023 **Robust Image Watermarking based on Cross-Attention and Invariant Domain Learning (CSCI)**
- Designed a robust image watermarking scheme using cross-attention (ViT)
- Trained a self-supervised invariant domain to learn semantic features

2022 **Perspective transformation layer (CSCI)**
- Proposed a lightweight layer that learns 2D projections of 3D views for multiple viewpoints

Present and Past Research

Present **Invariant Latent Features in Large Language Models**
- Studying model-specific invariant features for robust model attribution

Present **GAN-Based Auto Augmenter for Realistic Image Augmentations**
- Learning modular auto-augmentations for robust invariant latent representation

2022 **Sentiment Analysis on Twitter data on Electric Vehicles**
- Analyzed sentiment with lexical and Word2Vec-LSTM approaches on scraped twitter data

2020 **Stock trading optimization using Reinforcement Learning**
- Used a DQN agent to optimize stock trading on the S&P500 index using Google Trends data

Reviewer Service

2022 - 2025 ACCV, Scientific Reports - Nature, Springer Nature

Teaching Experience

2023 - 2024	**Graduate teaching assistant** at University of Nebraska at Omaha
2022 - 2023	**Intern supervisor** at University of Nebraska at Omaha
2018 - 2020	**Graduate teaching assistant** at Utah State University

Technical skills

Programming:	Python, Linux, BASH, MATLAB, Git
Deep learning:	Transformers, GAN, LLM, NLP, Tensorflow, Keras, PyTorch
Others:	OpenCV, CUDA, SQL, HTML, JAVA, C/C++