N A Adarsh Pritam

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OVERVIEW

I am currently a Master's student (2024–26) at Alliance University and a former summer Machine Learning Research Intern (2024) at i2CS Research Group, Indian Institute of Information Technology (IIIT) Kottayam, India. My research focus belongs to Machine Learning, Computer Vision, Natural Language Processing, and Generative Models, with applications to Medical Imaging and Clinical Decision Support. I have worked on multi-modal alignment of Vision Language Models for Plant Disease Detection and continue to explore Generative AI in healthcare applications. At Alliance, I am pursuing coursework in Deep Learning, Classical ML, ML Techniques for Image Processing, and Data Science while conducting research under Prof. Jeba Shiney.

EDUCATION

2024 – 2026 **Master of Science, Data Science** — **Alliance University**
Deep Learning, Classical ML, Data Science, ML for Image Processing. Bangalore, India (CGPA: 8.2/10)

2021 – 2024 **Bachelor of Science, Mathematics and Statistics** — **Bangalore University**
Mathematical Statistics, Probability, Applied Mathematics. Bangalore, India (CGPA: 6.5/10)

RESEARCH EXPERIENCE

08.2025 – Present **Student Researcher (Master's Thesis)** — **Alliance University, Bangalore**
Supervisor: Dr. Jeba Shiney
SkinGenBench: Benchmarking Generative Models for Dermatological Image Classification. Developed PyTorch-based framework to test generative augmentation and preprocessing for class imbalance in medical imaging.

05.2025 – 09.2025 **Summer ML Research Intern** — **IIIT Kottayam, i2CS Research Group**
Supervisor: Dr. Kala S
Studied Visual Language Models for Plant Disease Detection. Integrated CLIP ViT-L with InternLM2, designed new projection architecture, applied scalable training. Contributed to manuscript.

02.2025 – 05.2025	**Research Project** Developed end-to-end Sign Language Translation pipeline using CNN+T5. Published peer-reviewed IEEE paper, built dataset, and fine-tuned models for ISL-to-English translation.	**Alliance University, Bangalore** Supervisor: Dr. Asha Kurian

Glimpse of MSc. Thesis

Title: Preprocessing Techniques for S-O-T-A Generative Model-Based Data Augmentation for Skin Cancer
Supervisor: Prof Jeba Shiney
Abstract: Early and accurate diagnosis of skin cancer is critical for patient survival, and deep learning models are promising tools for this task. The reliability of these models, however, is fundamentally dependent on the quality and diversity of the training data. Publicly available datasets often suffer from significant limitations such as class imbalance, prompting the use of generative models to synthesize data for augmentation.
While much research has focused on generative model architectures, the broader methodological conditions under which these models are trained are also critical to the quality of the output. This work presents a systematic investigation into the synthetic data generation pipeline for dermoscopic images. The utility of the resulting data is subsequently evaluated through its impact on the performance of a downstream diagnostic classifier. The study aims to inform best practices for data augmentation, contributing to the development of more reliable AI-powered tools for clinical dermatology.

PUBLICATIONS

- N. A. Adarsh Pritam and A. Kurian, "An End-to-End Sign Language Translation Pipeline from Static Gestures to English Using T5," *2025 International Conference on Emerging Technologies in Computing and Communication (ETCC)*, Bangalore, India, pp. 1-6, doi: 10.1109/ETCC65847.2025.11108641.

PROJECTS

1. **Personalized Conversational AI** (2025, Ongoing) GitHub
   Built an LLM from scratch to mimic communication style using personal chat logs. Implemented tokenizer, transformer, and QLoRA-based fine-tuning.

2. **LLaMA Reimplementation** (2025) GitHub
   Educational PyTorch reimplementation of LLaMA-style transformer with attention, GQA, RoPE.

SKILLS

Programming: Python (Advanced), R, SQL, Java
Libraries: PyTorch, Transformers, OpenCV, Scikit-learn, Pandas, NumPy, Matplotlib, Seaborn
Cloud/Data: AWS, Apache Kafka, BigQuery, PostgreSQL
Visualization: Tableau, Power BI, Jupyter Notebook

CERTIFICATIONS

- AWS Certified AI Practitioner (2024)
- Mathematics for Machine Learning and Data Science – DeepLearning.AI (2024)
- Google Data Business Intelligence Specialization (2023)
- Google Data Analytics Specialization (2023)

AWARDS & ACHIEVEMENTS

- Project Lead, Academic Review Paper
- Two-time Winner, Battle of the Bands (Musical Competition)
- High Achiever's Award, Distinction in Grade 4 Rock Guitar (London College of Music)

REFERENCES

1. Dr. Jeba Shiney (jeba.shiney@alliance.edu.in), Professor at Alliance University.
2. Dr. Kala S (kala@iiitkottayam.ac.in), Head of i2CS Research Group at Indian Institute of Information Technology (IIIT) Kottayam.
3. Dr. Raj Dash (raj.dash@alliance.edu.in), Assistant Professor at Alliance University.
4. Mr. Mihir Dash (mihir@alliance.edu.in), Associate Professor and Interim Associate Dean at Alliance University.
5. Dr. Vivek Mishra (vivek.mishra@alliance.edu.in), Associate Professor at Alliance University.
6. Dr. Asha Kurian (asha.kurian@alliance.edu.in), Assistant Professor at Alliance University.