Satya Akhil Galla

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Summary

Master of Artificial Intelligence candidate with a strong foundation in software engineering and developing robust data-driven systems. Eager to apply skills in C++, Python, and complex system troubleshooting. Experience centers on building and deploying software tools and pipelines, with project work in medical diagnostics.

Education

Boston University — **Boston, MA**
Masters in Artificial Intelligence — *Expected Dec 2025*

IIIT Sri City — **India**
B.Tech in Computer Science — *Graduated May 2024*

Skills

Languages: Python, C++, SQL, JavaScript, Bash, Powershell
Frameworks: PyTorch, TensorFlow, Keras, Scikit-learn, LangChain, Node.js, React
Developer Tools: Git, FAISS, HuggingFace, OpenCV, Gradio
Data & Visualization: PowerBI, NumPy, Pandas, Matplotlib, Seaborn

Intern/Experience

Aaizel International Tech Pvt Ltd — **Feb 2024 – May 2024**
Deep Learning Intern — *India*
- Developed and deployed the first software pipeline for automated analysis of complex IR & RGB satellite imagery.
- Built a Gradio-based software tool for analysts to instantly visualize semantic graphs, improving workflow efficiency.

Terrafic Inc — **June 2023 – Nov 2023**
Machine Learning Research Intern — *India*
- Engineered a geospatial software pipeline with super-resolution and segmentation for a defense-mapping demo.
- Integrated a SAM-based segmentation module, delivering a live proof-of-concept that validated the system.

ISRO - Indian Space Research Organisation — **Dec 2022 – May 2023**
Machine Learning Research Intern — *India*
- Implemented a GCN pipeline to classify Chandrayaan-1/2 data, performing root-cause analysis on model performance.
- Researched and benchmarked adaptive graph construction strategies to improve model generalization.

Spatial Analytics and Machine Intelligence(SAMI) Lab - IIIT Sri City | **Lab Website** — **Aug 2022 – May 2024**
Undergraduate Researcher — *India*
- Developed graph models improving lunar hyperspectral image classification to 98% accuracy on sensor data.
- Authored an IEEE paper and presented a NASA poster on ISRO-funded mineral-mapping initiative.

Projects

Multimodal Skin Cancer | *PyTorch, TensorFlow* | GitHub — **Sep 2024 – Dec 2024**
- Engineered a diagnostic tool integrating image and tabular data, mirroring data fusion in medical devices.
- Validated an ensemble system that raised ROC-AUC to **0.96**, a +15 point lift over single-modal baselines.

Minimizing Hallucination in Medical LLMs | *LLaMa, LangChain, FAISS* | GitHub — **Sep 2024 – Dec 2024**
- Built a medical RAG stack to reduce hallucinations, a critical validation step for deploying software in healthcare.
- Increased SBERT similarity to **0.87** (+38%) over a baseline LLaMA-3 for more reliable system outputs.

Text-to-Music Generation with Transformers and Diffusion Models | GitHub — **Jan 2025 – May 2025**
- Analyzed system-level performance of transformer-first vs. diffusion-first cascades for generative audio.
- Showed an AudioLDM→MusicGen cascade optimally balanced semantics and audio quality, improving on standalones.

Layer-Residual Co-Attention Networks (LRCN) for VQA | *PyTorch* | *PyTorch* | GitHub — **Jan 2025 – May 2025**
- Open-sourced a full PyTorch replication of LRCN variants with an integrated tool for model visualization.
- Validated the implementation by matching VQA-v2 benchmark results, with plans to extend testing to CLEVR.

Publications

Efficient Graph Formulation for Lunar Hyperspectral Image Classification | ***IEEE WHISPERS 2023*** | **Publication**
- Benchmarked 6 graph schemes; a non-linear graph lifted GCN accuracy to **97%**.
- Integrated autoencoder latents with the best graph, pushing system accuracy to **98.4%** for a mineral-mapping pipeline.

Enhancing Hyperspectral Classification with Adaptive Graph Construction | ***NASA NESF 2023 Poster #38, Maryland*** | **Poster**
- Showed a non-linear graph on Chandrayaan-2 data raised accuracy from 91% to **97%**.
- Proved adaptive graphs outperform handcrafted layouts, yielding more interpretable mineral maps.