

POOJARI NAGASHIVA

Machine Learning | Computer Vision | Generative AI Safety | Embedded AI
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LinkedIn | GitHub | Portfolio

Education

National Institute of Technology Andhra Pradesh

B.Tech. Electrical & Electronics Engineering, Minor: Quantum Computing

CGPA: 9.4/10

Narayana Junior College, Hyderabad

Class XII–Science Stream

Percentage: 9.75/10

Saint Theresa's English Medium High School, Warangal Rural

Class X–Secondary School Certificate

GPA: 10/10

Technical Skills

Languages: Python, C, C++, JavaScript

Data Structures & Algorithms: LeetCode 200+ problems (Arrays, Strings, Trees, Graphs, Dynamic Programming, Two Pointers, Sliding Window, Binary Search, Backtracking, Heaps)

ML/AI: PyTorch, TensorFlow, Keras, OpenCV, Scikit-learn, NumPy, Pandas, CNN, BiLSTM, Attention, Diffusion Models, RL, MARL, NLP

Web: React, Flask, FastAPI, HTML, CSS, REST APIs

Embedded: ESP32, Arduino, Raspberry Pi

Tools: Git, GitHub, MATLAB, VS Code, Jupyter, Qiskit

Work Experience

Research Intern – Generative AI Safety & Privacy, IISc Bangalore

2026–Present

- Developed a novel multi-subject identity protection framework against DreamBooth-based personalization attacks in latent diffusion models.
- Designed a gradient-based attention attribution method to identify identity-sensitive self-attention heads and constructed shared identity subspaces for localized immunization.
- Implemented the framework using PyTorch, Stable Diffusion, DreamBooth, LoRA, DDIM, and ArcFace, and evaluated it using DINO, CLIP, and BRISQUE metrics.
- Achieved 69% lower DINO score ($0.137 \rightarrow 0.042$) compared with the APDM baseline, improved semantic preservation (CLIP: $0.125 \rightarrow 0.178$), and reduced optimization time from 48 hours to 2 hours ($24\times$ faster) while maintaining comparable attack inference time.

Research Project – Early Detection of Brain Neurodegeneration

- Developing deep learning pipelines for early Alzheimer's detection using multimodal neuroimaging.

AI Data Analytics Intern – InAmigos Foundation

May 2026–June 2026

- Conducted data analysis and built AI-driven analytics pipelines to extract actionable insights from organizational datasets supporting donation and volunteer campaigns.

Projects

Multilingual Safety Firewall for Obfuscated & Code-Mixed Prompts

In Progress

- Developing a lightweight multilingual safety firewall combining character-level obfuscation normalization, multilingual risk detection, risk fusion, and safe prompt rewriting for prompt injection, toxicity, hate speech, and self-harm content.
- Investigating robustness of pretrained safety classifiers against leetspeak, punctuation and spacing perturbations, repeated-character obfuscation, and Telugu/Hindi-English code-mixed prompts using public safety datasets and a custom evaluation set.

RedRob – AI Candidate Ranking Platform

GitHub

- Built full-stack AI-powered web application that automates candidate shortlisting by parsing resumes and ranking applicants against job descriptions using NLP-based similarity scoring.
- Designed responsive React frontend with recruiter dashboard displaying ranked candidates, match scores, and filter controls; integrated REST APIs for real-time processing of uploaded resumes.

Deep Learning Framework for EV Battery Health

GitHub

- Built hybrid CNN+BiLSTM+Attention framework for Battery Anomaly Detection, SoC/SoH estimation, RUL prediction, and EV Range forecasting on 10,000+ records – $R^2 > 0.97$ (SoH), 0.98 (RUL), 0.997 (Range).
- Engineered thermal variation, voltage-current interaction, and power degradation features; modular ML/DL pipelines with reusable training workflows and saved model checkpoints.

HRI Robot

GitHub

- Engineered autonomous companion robot with ESP32 + Raspberry Pi for real-time sensor acquisition, motor control, and OpenCV obstacle detection; integrated OpenAI API for natural language interaction.
- Secured 4th Place at Genesis 2.0 (NIT AP inter-college expo) among 85+ projects – received formal Appreciation Award.

AutoMark

GitHub

- Automated attendance using dlib + CNN face recognition – 92% accuracy across 30+ student profiles, sub-5s inference. Real-time Google Sheets cloud sync.

Multi-Agent Reinforcement Learning

GitHub

- Custom MARL environment with decentralized reward structures; agents developed emergent swarm intelligence over 8000+ training episodes via reward optimization and convergence analysis.

Leadership

- Joint Secretary, Coding Club, NIT Andhra Pradesh – Research and publish technical blogs on research papers, emerging technologies, AI/ML trends, and technological frameworks.
- Junior Executive Member, AI & Robotics Club, NIT Andhra Pradesh.

Achievements & Awards

- **4th Place, Genesis 2.0, NIT Andhra Pradesh** – HRI Robot project among 85+ projects; received formal Appreciation Award.
- **3rd Prize, Coding Club Idea Competition, NIT Andhra Pradesh** – Recognized for project idea and presentation.
- Letter of Recommendation and Letter of Appreciation – InAmigos Foundation.

Certifications

NPTEL Cloud Computing, NPTEL AI & ML, NVIDIA DLI Deep Learning, NVIDIA DLI NLP (In Progress), Microsoft Azure Fundamentals (AZ-900), Infosys Springboard.

Research Interests

Machine Learning, Computer Vision, Generative AI Safety, Multi-Agent RL, Quantum Computing, Intelligent Embedded Systems.