

# T Sudeep Reddy

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## PROFILE

A curious and adaptable student with a passion for global exposure, innovation, and interdisciplinary learning. Driven by a desire to explore emerging technologies and diverse cultures, I aim to contribute meaningfully through collaboration and cross-cultural exchange. Possessing a strong foundation in problem-solving, coding (C, Python), and AI applications, I am eager to expand my perspective through hands-on experiences that blend technology, creativity, and societal impact.

## EDUCATION

**B-Tech in Computer Science and Engineering (Artificial Intelligence)** 2022 – 2026  
Amrita Vishwa Vidyapeetham Bangalore, India

**Higher Secondary Education 12th** 2020 – 2022  
Narayana Junior college Hyderabad, India

## SKILLS

**Languages:** Python, C++, JavaScript, TypeScript, SQL

**Libraries & Framework:** NumPy, Pandas, Scikit-learn, TensorFlow, PyTorch, OpenCV, NLTK, SpaCy, Matplotlib

**Tools & Platforms:** AWS (S3, EC2), Git, SQL (MySQL/PostgreSQL), Postman, MongoDB

**Core Concepts:** Machine Learning, Deep Learning, Computer Vision, NLP, Data Analytics, Reinforcement Learning

**Soft Skills:** Communication, Team Collaboration, Adaptability, Leadership, Problem Solving, Research & Innovation

## PROFESSIONAL EXPERIENCE

**AI Engineering Intern at InfernoMach**

**AI-Powered Image Super-Resolution and Defect Detection**

- Engineered a full-stack computer vision solution for automated quality control, enabling the detection and classification of defects on industrial components from visual data.
- Implemented a U-Net and an autoencoder architecture to perform image super-resolution, significantly enhancing the quality of low-resolution inputs.
- Quantified the effectiveness of the image processing model using established metrics like PSNR (Peak Signal-to-Noise Ratio) and SSIM (Structural Similarity Index).
- Developed a classification model to categorize images as 'ok' or 'defective' based on visual features, a critical step in automated quality assurance.

## PROJECTS

**A Hybrid AI-Driven Energy Conservation Framework for CaaS Cloud Data Centers Using Computational Steering and Federated Learning**

- Designed and implemented a hybrid AI-driven energy optimization framework integrating Deep Reinforcement Learning (DRL), Federated Learning (FL), and computational steering for CaaS cloud data centers.
- Developed an OpenAI Gym-based DRL scheduler for adaptive workload allocation, reducing energy imbalance and enhancing resource utilization across heterogeneous racks.
- Engineered an Agentic AI Monitoring module to perform dynamic learning-rate steering and real-time hyperparameter tuning for sustained convergence and stability.
- Integrated Federated Learning (Flower framework) for distributed model collaboration across data centers, ensuring privacy-preserving global optimization.
- Conducted simulations via KubeSim and CloudSim Plus, achieving a 15–20% reduction in mean energy consumption compared to baseline scheduling policies.
- Delivered a scalable, interpretable, and energy-efficient system supporting adaptive, autonomous decision-making in next-generation cloud infrastructures.

## PUBLICATIONS

**Comparative Study of Adversarial Image Attacks** 2025

**Cloud Storage Security Audit System** 2025

**Analysis of Green Computing models on AWS using machine learning algorithms** 2024

**Smart Pill Container For Improved Medication** 2024