

ANANTH SHYAM

International Institute of Information Technology, Bangalore

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Education

International Institute of Information Technology, Bangalore

July 2026 – June 2028

Master of Technology in Artificial Intelligence and Data Science

Shiv Nadar University, Chennai

Sep. 2022 – June 2026

Bachelor of Technology in Artificial Intelligence and Data Science

CGPA - 9.019/10

Experience

RISE Lab [IIT-M]

June 2025 – Present

Research Intern | Python, Python, Neural Networks, CNN

Chennai, India

- Developed QUARK, a unified framework combining multi-teacher knowledge distillation, sensitivity-based mixed-precision quantization, and adversarial training to jointly optimize accuracy, robustness, and efficiency in CNNs.
- Achieved up to 85.5% smaller model size, 37.15% lower energy use, and 46.79% higher PGD accuracy over baselines, outperforming SOTA methods on CIFAR-10/100 and ImageNet; under review at WACV 2027.

XFormics Technologies India

May 2025 – July 2025

Data Science Intern | Python, ML, DL, Azure

India

- Built and benchmarked multiple time-series forecasting models (MQCNN, N-BEATS, GBM) on retail sales data, engineering SKU-level features to improve demand prediction accuracy.
- Designed an ensemble-based forecasting pipeline combining the top-performing models, providing more reliable demand estimates to support inventory planning and business decision-making.

AI4Bharat [IIT-M] |

May 2024 – Sept 2024

Research Intern | Python, Linux, NLP, Transformers

Chennai, India

- Devised a novel methodology to improve alignment of Text-to-Speech (TTS) models for any language by extending a Montreal Forced Aligner (MFA) model, replacing the conventional g2p pipeline with a g2g approach for finer alignment.
- Applied the methodology to 22 Indic languages demonstrating improved accuracy over current legacy systems & minimal time difference. Made Open-Source and to be published in a conference. Received appreciation from Dr. Mitesh Khapra

Projects

Araycci – The Research Paper AI Assistant | Python, LLAMA3, Hybrid RAG, NLP, Huggingface |

- Developed a product enabling users to interact with 2.4 million research papers via ArXiv using LLAMA3 and a hybrid RAG pipeline (BM25 retrieval with cross-encoder reranking) for clustering, summarization, and multi-lingual Q&A.
- Coordinated the team and designed the retrieval architecture, improving search relevance over pure dense retrieval, especially for keyword and entity-heavy queries while integrating API keys and implementing ML libraries

Lightweight and Efficient YOLOv5 | Python, PyTorch, ONNX, CV, Edge AI |

- Developed a robust object detection pipeline for rice quality assessment using YOLOv5 Nano, achieving a baseline mAP@50 of 0.885 across 8 distinct classes.
- Implemented Static Post-Training Quantization (PTQ) to convert FP32 ONNX models to INT8, reducing model footprint by 2.7x (8.06MB to 2.99MB) with zero loss in mAP@50 accuracy, and validated via a mobile app demo.

CarbonAware-BMS | Python, Azure, Spark, Kafka, ML Models, Power BI |

- Built an end-to-end Azure pipeline (IoT Hub → Azure Functions → Azure SQL/Data Lake → Azure ML) to ingest and process real-time data from 100+ building sensors, powering energy forecasting and anomaly detection.
- Implemented a ML stack (XGBoost, Isolation Forest, MQCNN) for 24-hour energy forecasting and anomaly detection, and built a carbon-tracking module (kWh → kgCO₂e) with load-shifting recommendations visualized via Power BI.

Technical Skills

Languages & Databases: Python, SQL, C, C++, R
GenAI & Agents: LLMs, RAG, Agentic Systems, HF
Tools: Azure, Docker, Git, Linux, Power BI, ONNX

ML & Deep Learning: PyTorch, TensorFlow, Keras
Data Engineering: Spark, Kafka, Hadoop, MongoDB

Achievements & Extracurriculars

- AIR 235** in GATE DA 2026; **NTSE Finalist**; Multiple medals in SOF, IAPT, and PRMO Olympiads at State level.
- Completed 5 **NPTEL Certifications** (Cloud Computing, BI & Analytics, Responsible AI Systems, Strategy & Tech, Privacy & Security in Social Media) and a Data Engineering course (Spark, Hadoop, Kafka, MongoDB).
- Finalist**, SSN HackIT Inter-College Hackathon (2023) [Powered by Google].
- University Football Team** player, represented SNU-C in South India Zonals and other tournaments.
- SIP State Level Abacus Competition:** Achieved 3rd place twice at Tamil Nadu level.