Home Page | LinkedIn Profile

Aditya Sridhar

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GitHub Profile | Google Scholar Page

I am a U.S. citizen pursuing my final semester of B.Tech in Computer Science & Engineering at IIT Hyderabad, specializing in **Machine Learning, NLP, LLMs, and model fine-tuning**. With a strong foundation in **AI scalability, MLOps, Cloud Computing**, and **model deployment**, I have built high-impact solutions, including a 95%-accurate skill-matching algorithm that **won the JLR Global NLP Hackathon**. In April 2025, I received the **Research Excellence Award from IITH**, for demonstrating the highest level of academic and research excellence. Passionate about optimizing deep learning systems, I thrive in high-performance teams and aim to drive cutting-edge AI innovations.

TECHNICAL SKILLS

Machine Learning & AI

Deep Learning (PyTorch, TensorFlow, Keras, Scikit-learn), Large Language Models (LLMs), Natural Language Processing (NLP), Transformers, Computer Vision (Research Interest), Reinforcement Learning, Explainable AI (XAI)

Programming Languages, Data & Engineering

Python, C, C++, SQL, MySQL
Applied Statistics, Probability, Neural Networks, Data Structures and Algorithms

Cloud Engineering & Deployment

MLOps, Model Deployment, Docker, Cloud Computing (Google Cloud, AWS), CI/CD

High-Performance Computing

CUDA, GPU Acceleration, Efficient Model Training

WORK EXPERIENCE

Consultant and Head, Artificial Intelligence Engineering — Aug 2024 – Present
Valet Network Inc. — New York, USA

- Engineered valet demand forecasting models using **supervised learning and adaptive weighting (exponential smoothing).**
- Improved **operational efficiency by 30%,** achieving **95% accuracy** through graph-based optimization.
- Streamlined **real-time ML inference with Docker**, enabling scalable **MLOps workflows** for seamless production deployment.

Software Development Engineer Intern — May 2024 - Jul 2024
Jaguar Land Rover — Bangalore, India

- Automated sprint planning in Jira by **building robust API integrations**, reducing task creation time by **35x**, and enabling **seamless CI/CD deployment.**
- Spearheaded testing automation development for vehicle software updates, creating modular workflows and **reducing validation time by 40%.**

CPO (Chief Product Officer) — May 2023 - Jul 2023
HeyDaw Technologies Pvt. Ltd. — Chennai, India

- Led an 8-member team to develop an **NLP-powered** music bot, optimizing workflows and user experience with **scalable cloud deployment** using AWS.
- **Fine-tuned GPT** and other **Large Language Models** for **domain-specific conversational AI,** resulting in **25% improved response accuracy**.

PROJECTS AND PUBLICATIONS

Semantic Perturbation-Based Counterfactuals and Training for Robustness against Adversarial Attacks

- Built a novel counterfactual framework to **boost model accuracy by 15%** through latent space perturbations.
- Designed a **stability regularization term** fortifying models against **adversarial attacks,** enhancing robustness in **real-world deployment scenarios.**

SKILLS: TensorFlow, CUDA for accelerated training, Model Optimization, Computer Vision, Neural Networks — GITHUB REPOSITORY

Attention-Guided Spectrogram Sequence Modeling with CNNs for Music Genre Classification — [PUBLICATION]

- Architected a novel **attention-based CNN model** for music genre classification, achieving **state-of-the-art accuracy.**
- Leveraged **semi-supervised learning, transfer learning,** and **data preprocessing,** optimizing classi5444fication performance with **limited labeled data**.
- Generated **deep neural embeddings**, improving feature representations for scalable classification and recommendation systems.

SKILLS: Deep Learning, PyTorch, CUDA, Transformers, Feature Engineering, Semi-Supervised Learning, MLOps — GITHUB REPOSITORY

Generalized Bayesian Predictive Coding Networks: An Exploratory Research Project

- Designed a **diffusion-based forgetting mechanism** to remove outdated samples, mitigating catastrophic forgetting while preserving key knowledge.
- **Enhanced recall accuracy & model stability** through targeted forgetting and analyzed architectural trade-offs, offering an alternative to k-NN retrieval.
- Investigated MSE sensitivity to parameter updates, revealing the critical role of posterior updates in optimizing recall precision and memory retention.

SKILLS: Probabilistic ML, Bayesian Inference, Predictive Coding, Memory-Augmented Networks, Python, PyTorch

AWARDS AND RECOGNITION

IIT Hyderabad

Apr 2025: Research Excellence Award: A prestigious award for *'truly demonstrating the highest level of academic and research excellence'*
Aug 2022: IIT Hyderabad Academic Excellence Award: For securing the **highest GPA in class (9.75/10)**

WINNER: JLR Global Hackathon (Top 1%, 250+ Teams): Led a cross-functional team of engineers to develop **95%-accurate NLP-based** skill-matching and task allocation algorithms using **LLMs**, demonstrating expertise in **NLP, model optimization and deployment**.

Oct 2019: Indian National Mathematics Olympiad: **Top 0.05% nationwide**, qualified for INMO through the highly competitive RMO exam.

EDUCATION

Indian Institute of Technology (IIT), Hyderabad — Nov 2021 – Apr 2025

Bachelor of Technology (B.Tech) – Computer Science & Engineering and Engineering Science — **GPA: 9.1/10**