# Ridheesh Amarthya

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Data Scientist skilled in AI, machine learning, and big data, driving impactful solutions through innovation and collaboration.

## EDUCATION

**University of Southern California, Viterbi School of Engineering**  —  Los Angeles, CA
Master of Science in Computer Science  —  **Sep 2023 – May 2025**

**Amity University Haryana, Amity School of Engineering & Technology**  —  Haryana, India
Master of Technology in Artificial Intelligence – *Valedictorian equiv. (Ranked 1st out of 200)*  —  **Aug 2022 – Jul 2023**

## PROFESSIONAL EXPERIENCE

**University of Southern California (Graduate Student Government)**  —  Los Angeles, CA
Finance Intern – Intern Team Lead  —  **Sep 2023 – Present**
- Streamlined workflows using Machine Learning (NLP, LLM) for data mining, greatly improving turnaround times.
- Led the hiring process for new interns, including screening, interviewing, onboarding, and training a team of three.
- Managed event funding applications totaling over $100,000 per semester, ensuring accuracy and compliance.

**Firstplanit**  —  London, United Kingdom (Remote)
Data Scientist – Team Lead  —  **Jun 2022 – Nov 2024**
- Established and led a 5-member data team at Firstplanit, spearheading the expansion of the materials database.
- Scaled the database by 25x (from 2,000 to 50,000 products) by implementing AI-enabled ETL pipelines.
- Engineered NLP-based data mining frameworks (Google Gemini API) for ETL pipelines, boosting data extraction.
- Implemented business-critical analytics & reporting frameworks for data-driven decision-making for top leadership.

**Green International Eximp**  —  Haryana, India
Web Developer  —  **Jul 2020 – May 2022**
- Led development of a responsive company website hosted on AWS S3, utilizing the MERN stack.
- Leveraged EC2, Bash, and Selenium automation to unit test RESTful APIs, reducing testing time by 50%.
- Boosted traffic by 40% within three months post-launch through SEO optimizations, ranking on Google's first page for 3 targeted keywords. Increased user engagement and conversion rates by 30% through improved UI/UX design.

## RESEARCH EXPERIENCE

**University of Southern California, Information Sciences Institute**  —  Los Angeles, CA
Graduate Student Researcher (AI and Machine Learning)  —  **Sep 2023 – Dec 2023**
- Fine-tuned BERT for MRPC tasks on GLUE benchmark, achieving 89.71% F1-score.
- Improved a federated model's performance to 80.78% F1-score by optimizing data shared weighting.
- Developed an interactive Streamlit app powered by the fine-tuned LLM and retrieval chains, leveraging Groq's LPU inference engine API for ultra-fast execution and LangSmith for monitoring.
- Designed and implemented a Retrieval-Augmented Generation (RAG) pipeline with LangChain, integrating OpenAI embeddings stored in ChromaDB, FAISS, and Pinecone for hybrid search.

**Amity University Haryana**  —  Haryana, India
Graduate Student Researcher (AI and Machine Learning)  —  **Aug 2022 – Aug 2023**
- Lead Author of an international research paper published by Springer, developing a Reinforcement learning (RL) model that achieved a 92% landing success rate in realistic high-precision simulations.
- Awarded Best Paper in Intelligent Systems & Machine Learning by India's Soft Computing Research Society (2023).
- Reduced convergence time by 38% with a curriculum-trained model, improving landing stability by 58%.

## PROJECTS

**INSAT 3D/3DR Satellite Cloud Data Visualization (Point Cloud)**
Smart India Hackathon (2022) – Finalist Team Leader
- Collaboration with the Indian Space Research Organization (ISRO) for improved satellite data visualization.
- Presented the solution to the **Prime Minister of India** during the Smart India Hackathon 2022 finalist event.
- Processed geospatial data from INSAT 3DR satellite (via MOSDAC) for real-time models of cloud formations.
- Visualized cloud height using GIS and 3D point cloud technology, representing atmospheric cloud layers.

**LoRA Headshot generator**
- Deployed a fine-tuned flux-dev-Lora (12B rectified flow model) for photorealistic face synthesis, achieving FID <3.5 by fine-tuning custom data and utilizing facial landmark alignment and hybrid GAN-VAE refiners.
- Accelerated inference to <4s/image using NVIDIA H100 GPUs with FP8 quantization and fused LoRA weights.

## SKILLS

**Languages/Frameworks:** Python, TensorFlow, PyTorch, CUDA, OpenCV, C/C++, Java, JavaScript, React, Node
**Big Data & Data Engineering:** Hadoop, Spark, Kafka, Flink, Airflow, Pandas, NumPy, SQL, GraphQL, Selenium
**Tech Tools:** AWS, Docker, Kubernetes, Jenkins, RESTful APIs, CI/CD pipelines, Elastic Search
**Soft Skills:** Innovation, collaboration, problem-solving, fast learner, proactive, results-oriented, data-driven, creative