

ARYAN MAHESHWARI

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EDUCATION

University of Southern California Los Angeles, California
Master's in Applied Data Science January 2025-December 2026

Relevant Courses: Machine Learning for Data Science, Introduction to Database Management, Database Systems

KJ Somaiya Institute of Technology Mumbai, Maharashtra
Bachelor's of Technology in AI and Data Science Hons. Blockchain February 2020-May 2024

- Relevant Courses - Big Data, Data Mining, Data Analytics, Algorithm Design, Database Applications, Deep Learning, NLP, AI

TECHNICAL SKILLS

Programming:Python, SQL, NoSQL; Frameworks and Libraries: TensorFlow, scikit-learn, PyTorch, ,LlamaIndex, LangChain, AutoGen.
Developer Tools: Git, Docker, Kubernetes, REST APIs, Web Scraping

WORK EXPERIENCE

University of Southern California Los Angeles, California
Summer Research Intern June 2025-August 2025

- Leading a team of 8 interns in design and development of an AI-powered sports simulation system inspired by mechanics from mobile sports games, integrating roster optimization, player progression, and coach-driven rule logic
- Created a hybrid roster selection engine integrating rule-based logic with AI-driven scoring, optimizing player lineups across 11 positions by dynamically evaluating over 15 attributes (e.g., form, fatigue, chemistry); achieved a 25% improvement in simulated match performance consistency and a 40% reduction in lineup imbalance errors.
- Incharge of project and operations management over course of 2 months.

USC Autodrive Lab Los Angeles, California
AI Research Intern June 2025-Present

- Developing and optimizing perception, motion prediction, and planning modules for autonomous driving systems, increasing situational awareness and decision-making capabilities.
- Running a generative ai and transformer architectures on NVIDIA cude GPU distributed systems for accelerating model training and experiment runtimes by more than 400%.
- Implementing and tuning Deep Reinforcement Learning algorithms such as Proximal Policy Optimization (PPO) and Soft Actor-Critic (SAC) to model and guide decision-making agents for autonomous vehicle navigation and control with a mean position deviation of 0.4.

AGIE AI, Work From Home Mumbai,Maharashtra
Generative AI Intern August 2024-November 2024

- Spearheaded development of a Dialog Flow-based WhatsApp chatbot with Vertex AI integration, and executing end-to-end solutions reducing data latency by 23% whilst managing client relations.
- Devised a Proof of Concept (POC) to evaluate relevance of findings from cutting-edge machine learning research papers to funded AI startups, utilising GPT 3.5 for natural language understanding and semantic similarity scoring.

PROJECTS

Hierarchical Text Retrieval and Question Answering System us March 2025-May 2025

- Developed a hierarchical retrieval system using RAPTOR indexing and MILVUS: Implemented recursive clustering and summarization techniques, leveraging Gaussian Mixture Models and GPT-3.5-turbo, enabling efficient retrieval of high- and low-granularity content across 300+ page textbooks.
- Designed a question-answering pipeline with LLM integration: Integrated LLM's for generating precise, context-aware answers based on retrieved and ranked content, showcasing an end-to-end NLP solution.

Toxicity prediction Pipeline August 2025-Present

- Developed a modular AI pipeline for drug toxicity pattern recognition (e.g., LD50, BBB, VD) from SMILES leveraging XGBoost and custom featurisation, achieving up to $R^2 \approx 0.64$ and $MSE < 0.32$ across key endpoints.
- Designed a FastAPI + Celery-based microservice for asynchronous toxicity predictions, backed by Redis, PostgreSQL caching, and DVC-managed data/model versioning — enabling scalable batch & real-time inference.
- Incharge of server architecture design for remote mlflow project artifact and metrics storage.