

AVI MATHUR

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ABOUT ME

I am a third-year B.Tech CSE (AI) student at Poornima Institute of Engineering and Technology, Jaipur, with a strong interest in AI/ML driven by building and deploying practical AI systems such as RL environments, deployed neural networks, and generative AI tools. I enjoy approaching problems by building and experimenting, and I am now looking for a research environment where I can strengthen my theoretical understanding, contribute to meaningful work, and develop stronger research rigor.

RESEARCH OBJECTIVE

I am seeking a summer research internship in AI/ML to strengthen my understanding of research beyond project implementation. My interests lie in reinforcement learning, LLM evaluation, and generative AI systems. I have built projects in these areas and now want to work in a research environment where I can deepen my theoretical understanding, improve my problem-solving approach, and contribute to meaningful research under strong mentorship.

RESEARCH INTERESTS

Reinforcement Learning (sparse-reward systems, agentic tasks) | LLM Evaluation | Generative AI Systems | AI for Social Good | Scalable ML Systems

EDUCATION

Poornima Institute of Engineering and Technology, Jaipur Aug 2023 - Jul 2027
B.Tech Computer Science and Engineering (Artificial Intelligence) CGPA: **8.01 / 10**

KEY ACHIEVEMENTS

Apple Swift Student Challenge 2026 - Winner 2026
Selected globally among top student developers. Built ScanSafe, an on-device allergen safety scanner for iOS 26 using Apple Intelligence and VisionKit.

Meta x PyTorch OpenEnv Hackathon - Grand Finalist 2026
Placed among the top teams out of 52,000+ registered developers. The qualifying submission was the Email Triage RL Environment (see Research Projects).

National Hackathon Participation: Led technical teams at SBI Life Hack-AI-Thon and EY Techathon 5.0; volunteered at Smart India Hackathon 2025 Grand Finale.

Oracle Certifications: OCI 2025 Generative AI Professional | Oracle AI Vector Search Certified Professional.

RESEARCH AND TECHNICAL PROJECTS

Email Triage RL Environment

Meta x PyTorch Finalist

Python | OpenEnv | FastAPI | Docker | Hugging Face Spaces

- Framed email triage as a multi-tier RL benchmark (easy / medium / hard) to study sparse-reward challenges in knowledge-work agents; published as an OpenEnv-compatible environment.
- Designed a step-wise reward broken down into correctness, efficiency, and routing-accuracy signals to give the policy more granular feedback than terminal-only rewards.
- Containerized with Docker and deployed to Hugging Face Spaces with API docs and a client SDK.

Deep Deterministic Policy Gradient (DDPG)

Independent Study

Python | TensorFlow

- Followed and implemented the DDPG algorithm covering actor-critic updates, experience replay, and soft target-network updates; used as a hands-on way to build intuition for continuous action-space RL.
- The goal was to understand the mechanics well enough to modify and experiment with the algorithm rather than just use a library.

Neuro Scan - Medical Image Diagnosis

AI for Social Good

Python | TensorFlow | CNN | Docker

- Built a CNN for medical image classification on imbalanced clinical datasets; tested different architectural choices (depth, skip connections, pooling) to understand their effect on performance.
- Containerized for reproducible deployment; built a lightweight inference interface aimed at non-technical users in health settings.

EXPERIENCE

Advanced Software Engineering Virtual Intern - Walmart USA

Dec 2025 - Jan 2026

(Forage)

- Worked on a novel heap data structure for multi-package routing logistics; completed challenges across data structures, software architecture, and relational database design.

Salesforce CRM Intern - Raptbot Technologies, Jaipur

Jul - Aug 2024

- Built Hotel and Bank Management Systems using Salesforce CRM, workflow automation, and database modelling.

TECHNICAL SKILLS

AI / ML: Reinforcement Learning, TensorFlow, RAG pipelines, LangChain, Generative AI, Pandas, NumPy, Scikit-learn

Languages: Python, C++

Systems and Deployment: Docker, FastAPI, Streamlit, Hugging Face Spaces, PostgreSQL, Chroma, Google Cloud Platform, Git / GitHub