ANSH CHAUHAN

AI Engineer | Computer Vision & Generative AI Specialist

New Delhi, India | +91 7838960611 | chauhananansh289@gmail.com
linkedin.com/ansh-chauhan | github.com/Anshchauhanhub

PROFESSIONAL SUMMARY

Innovative and research-oriented **Artificial Intelligence Engineer** with a strong foundation in **Deep Learning, Computer Vision, and Agentic AI**. Demonstrates expertise in building complex multi-agent systems, including autonomous RL-based medical diagnostics and real-time edge detection systems for aerospace applications.
Proficient in the full AI lifecycle—from data engineering and custom model training (PyTorch, TensorFlow) to full-stack deployment (Flask, Docker). Passionate about leveraging **Generative AI (LLMs)** and **Reinforcement Learning** to solve critical challenges in healthcare and safety. Proven leadership capability as a Technical Lead, fostering open-source innovation and organizing large-scale hackathons.

EDUCATION

B.Tech in Artificial Intelligence & Data Science *2023 – 2027 (Expected)*
Guru Gobind Singh Indraprastha University (Delhi Technical Campus) *New Delhi, India*

- **CGPA:** 8.84 | **University Rank:** 74
- **Relevant Coursework:** Advanced Machine Learning, Artificial Intelligence, Data Structures & Algorithms, Database Management Systems, Operating Systems, Probability & Statistics.
- **Societies:** Distinguished Member of The FOSS Club (Free Open Source Software) & The ACE Society.

TECHNICAL SKILLS

Languages: Python (Expert), SQL, C++, HTML/CSS, JavaScript.

Deep Learning AI: PyTorch, TensorFlow/Keras, OpenCV, YOLOv8, EfficientNet, Stable Baselines3 (RL).

Generative AI: Llama 3, Groq API, LangChain, LangGraph, RAG (Retrieval-Augmented Generation).

Data Engineering: Pandas, NumPy, Scikit-Learn, Matplotlib, Seaborn, Power BI.

Deployment Tools: Docker, Kubernetes, Flask, Streamlit, Git/GitHub, Linux.

PROFESSIONAL EXPERIENCE

Technical Lead *March 2024 – Present*
The FOSS Club (Trey Research) *New Delhi, India*

- **Event Orchestration:** Spearheaded the end-to-end technical execution of 5+ major hackathons and coding workshops, managing logistics for 200+ participants.
- **Strategic Partnerships:** Coordinated with industry experts and guest speakers to conduct specialized sessions on Cloud Computing and AI, enhancing student exposure to industry trends.
- **Mentorship:** Guided junior developers in Python programming and Git workflows, fostering a culture of open-source contribution and collaborative development.
- **Technical Infrastructure:** Managed the club's digital assets and repositories, ensuring best practices in code maintenance and documentation.

KEY PROJECTS

Super-Doctor AI: Autonomous Radiology Workstation *PyTorch, RL (PPO), Flask, Llama 3*
A multi-agent medical system that uses Reinforcement Learning to autonomously "fix" X-rays.

- **RL Vision Agent:** Engineered a Proximal Policy Optimization (PPO) agent that dynamically adjusts image parameters (contrast, brightness) to maximize feature visibility, acting as a "Virtual Radiologist."
- **Hybrid Architecture:** Integrated a fine-tuned **Faster R-CNN (ResNet50)** backbone to detect 14 thoracic abnormalities (e.g., Pneumonia, Cardiomegaly) on the optimized scans.

- **Generative Reasoning:** Deployed **Llama 3 (via Groq)** to interpret visual detections and generate professional medical reports explaining the pathophysiology of findings.
- **Full-Stack Interface:** Built a production-grade Flask application featuring real-time "Action Replay" of the agent, confidence heatmaps, and automated PDF reporting.

Astronaut Emergency Equipment Finder *YOLOv8, Computer Vision, Edge AI*
A real-time safety system for spacecraft environments to locate critical tools instantly.

- **High-Performance Detection:** Trained a custom **YOLOv8** model to detect emergency assets (Fire Extinguishers, Oxygen Tanks, Toolboxes) achieving **93.4% mAP@0.5**.
- **Real-Time Optimization:** Optimized inference latency to **11.9ms**, enabling seamless performance on constrained edge devices like astronaut tablets.
- **Offline Architecture:** Designed the system to function with zero internet dependency, ensuring reliability during deep space missions.
- **Precision Engineering:** Achieved a **98.04% Precision Score**, minimizing false positives in critical high-stress scenarios.

Acne Analysis & Dermatology Assistant *TensorFlow, EfficientNetB0*
AI-powered skincare diagnostic tool providing personalized treatment recommendations.

- **Deep Learning Model:** Fine-tuned an **EfficientNetB0** CNN architecture to classify facial images into 5 specific skin conditions (Cyst, Pustules, Blackheads, etc.).
- **Performance Optimization:** Implemented data augmentation (rotation, zoom) and class weighting to handle dataset imbalance, achieving **96.84% Test Accuracy** and a **0.97 F1-Score**.
- **Application Deployment:** Deployed a user-friendly Streamlit web app that provides actionable skincare advice based on model predictions.

Sentiment & Emotion Analysis System *NLP, Scikit-Learn, TF-IDF*
Dual-task text classification engine for analyzing user feedback and emotional tone.

- **NLP Pipeline:** Developed a robust preprocessing pipeline including tokenization, stop-word removal, and TF-IDF vectorization (10k features) with N-gram support.
- **Dual-Model Architecture:** Trained separate Logistic Regression models to predict **Sentiment** (Positive/Negative) and **Emotions** (Joy, Fear, Anger, Surprise).
- **Result:** Achieved **90.57% accuracy** on emotion classification, providing visual confidence metrics for model interpretability.

Movie Recommender System *Python, Streamlit, Pandas*
Content-based recommendation engine for personalized movie discovery.

- **Algorithm Design:** Implemented a content-based filtering approach using cosine similarity on movie metadata (genres, cast, keywords).
- **Interactive UI:** Developed a Streamlit dashboard allowing users to select movies and view recommended titles with fetched posters via API integration.

CERTIFICATIONS & ACHIEVEMENTS

- **Fundamentals of Docker Kubernetes** - Cloud DevOps Certification.
- **Data Analysis with Python** - IBM Certified.
- **Data Science with Python Bootcamp** - Comprehensive training in ML pipelines.
- **University Rank Holder:** Ranked 74th across the university in B.Tech (AI DS).

LANGUAGES

English: Professional Working Proficiency (C2)

Hindi: Native Proficiency