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Professional Summary

A driven Computer Science undergraduate at IIT Jodhpur with hands-on experience in building scalable backend systems and machine learning pipelines. Seeking a Software Development Engineer role to apply strong problem-solving skills and experience in Python, FastAPI, and cloud technologies to create efficient and impactful software solutions.

Education

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech. (CSE)	Indian Institute of Technology, Jodhpur	8.47(current)	2023-present
Senior Secondary	CBSE Board	94.4%	2023
Secondary	CBSE Board	97.2%	2021

Experience

- **NovaVistaAI**
  Software Development Intern - AI/ML June 2025 – Present
  – Designed and deployed a scalable backend pipeline to deduplicate 7.2M+ hotel room rate entries using clustering
  – Integrated **Azure OpenAI API** to standardize noisy, unstructured room data via LLM-based summarization
  – **Cut LLM calls by 85%** (7.2M to 1.1M) through **caching**, boosting API efficiency and saving token credits
  – Achieved 70% deduplication on sample scattered data , reducing over 7.2 million rates to 2 million
  – Developed a production-ready REST API to serve cluster IDs and eliminating duplicate rates for users
  – **Technologies:** FastAPI, Python, Azure OpenAI, NumPy, Scikit-learn, REST APIs
- **Machine and Medical Vision Group (MMVG), IIT Jodhpur**
  Undergraduate Research Intern – ML Systems Sept. 2024 – Present
  – Built **deep learning pipelines** using PyTorch for few-shot and federated learning in medical imaging tasks
  – Contributed to research on **privacy-preserving learning systems**, built federated learning pipelines
  – Implemented **U-Net, LSTMs** and **contrastive learning** models; used PyTorch for experimentation

Projects

- **Federated Learning API (FedAvg)** *May 2025 – Jun. 2025*
  Conducted under supervision of Prof. Bikash Santra at MMVG lab GitHub | DockerHub
  Built and deployed a modular federated learning pipeline using FastAPI and Docker
  – Implemented the **FedAvg** algorithm for decentralized federated training on non-IID CIFAR-10 data, partitioned using Dirichlet distribution with **alpha = 0.5**, achieving approximately **75%** accuracy across **5 distributed clients**
  – Exposed training and inference endpoints via using the lightweight and high-performance FastAPI framework
  – Containerized the entire system using Docker for portability and reproducibility accross environments
  – **Tools & technologies used**: Python, PyTorch, FastAPI, Docker, Git, Jupyter Notebook
- **MoodFlix – AI-Based Movie Recommendation System** *Feb. 2025 – Apr. 2025*
  Software Engineering Course Project - Under Supervision of Prof. Romi Banerjee GitHub
  Designed an AI-based emotion-driven movie recommender for 10,000+ movies from TMDB
  – Developed an emotion-based movie recommender using bge-large-en embeddings and huggingface transformers
  – Engineered a Faiss retrieval system for over 10k movies using Euclidean and cosine similarity metrics
  – Built and deployed the core AI components, leveraging PyTorch for modeling and NumPy for data processing
  – **Tools & technologies used**: PyTorch, NumPy, Faiss, Hugging Face Transformers,Git and JSON

Technical Skills

- **Programming Languages:** Python, C, C++, HTML, CSS
- **Frameworks & Libraries:** PyTorch, TensorFlow, Keras, NumPy, Pandas, Matplotlib, FAISS, FastAPI, Docker
- **Machine Learning & AI:** Deep Learning, Computer Vision, Contrastive Learning, Meta-Learning, Federated Learning, Few-Shot Learning, Data Augmentation, Generative models (GANs ,Diffusion Models)
- **Software Development:** Agile Methodology, Code Review, Unit Testing, Debugging, Version Control
- **Other Skills:** REST API, File Compression Algorithms ,Git ,Github ,Command line tools
- **Relevant Coursework:** Data Structure & Algorithms,Pattern Recognition & Machine Learning, Software Engg

Achievements and Certifications

- Secured **All India Rank 1648** in **JEE Advanced 2023**, a premier national-level engineering entrance exam.
- Completed Stanford University's **Machine Learning Specialization** on Coursera, including:
  – Supervised Machine Learning
  – Advanced Learning Algorithms
  – Unsupervised Learning, Recommenders & Reinforcement Learning

Positions of Responsibility

- **Assistant Head, Publicity and Media :**Sandstone Entrepreneurship Fest, IIT Jodhpur *2024*
- **Volunteer, Publicity and Media :**Prometeo Tech Fest, IIT Jodhpur *2024*