

UTSAV DHARANI

San Bernardino, CA

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EDUCATION

California State University, San Bernardino

M.S. Computer Science [GPA: 3.48/4.00]

Expected Dec 2026

San Bernardino, CA

LDRP Institute of Technology and Research

B.E. Computer Engineering [GPA: 3.26/4.00]

May 2024

Gandhinagar, India

TECHNICAL SKILLS

Languages: Python, Java, SQL

ML/DL: PyTorch, TensorFlow, scikit-learn, model training & evaluation, feature engineering

LLM/NLP: RAG, embeddings, FAISS, LangChain, LlamaIndex, summarization, keyword/intent extraction, prompt iteration

Data: pandas, NumPy, ETL pipelines, data cleaning/standardization

Backend/MLOps: FastAPI, Flask, REST APIs, Docker, CI/CD, Git/GitHub, Linux, logging/monitoring

EXPERIENCE

Graduate Research Assistant — AI/ML Engineer

Jul 2025 – Present

California State University, San Bernardino (Office of Institutional Research)

San Bernardino, CA

- **Keywords:** Python, FastAPI, SQL, LLMs, RAG, embeddings, FAISS, NLP, sentiment analysis, thematic analysis, intent/entity extraction, Docker, Git
- Build LLM-enabled internal tools for institutional survey reporting and analysis; translate staff questions into end-to-end ML/NLP workflows deployed behind maintainable APIs.
- **AI Integrated Survey Assistant (LLM + RAG):** Implemented a FastAPI backend that supports natural-language querying over survey reports and returns grounded answers with survey IDs/links for fast verification.
- Designed a retrieval-augmented generation (RAG) pipeline: cleaned and normalized survey PDFs, chunked content, generated embeddings, and indexed vectors in FAISS for low-latency semantic retrieval across questions and responses.
- Developed prompt templates and system instructions to keep responses tied to retrieved context; iterated on answer format (citations/IDs, key phrases, short summaries) based on staff feedback.
- Added NLP analytics on retrieved responses (keyword mining, sentiment analysis, and thematic clustering/topic-style grouping) to help staff summarize trends without manually reading long reports.
- Implemented intent/entity extraction to map user queries to relevant survey instruments, sections, and question types; improved relevance with ranking rules, caching for repeat queries, and query refinement suggestions.
- **AIMS Scheduling (data + analytics foundation):** Co-designed a faculty scheduling system; defined normalized tables/keys/constraints and API views that support conflict detection and workload analytics across departments.

Software Engineer Trainee

Jul 2024 – Nov 2024

Techicom — Software Development AI Solutions

Vadodara, India

- **Keywords:** Python, Java, REST APIs, Docker, CI/CD, microservices
- Shipped backend features and bug fixes in a microservices codebase; improved reliability with input validation, error handling, logging, and basic unit tests.
- Integrated model inference behind Python services by standardizing JSON inputs/outputs and adding metrics/logs for debugging and monitoring.

PROJECTS

AI Podcast Assistant | GitHub

Feb 2025 – May 2025

- **Keywords:** Python, LangChain, summarization, FastAPI, Docker, edge-tts
- Built a pipeline that converts research PDFs into short summaries and audio output; exposed features through a Dockerized FastAPI service for portable use.
- Implemented PDF parsing, text cleaning/chunking, summarization orchestration, and audio generation with metadata tagging for organized replayable outputs.

PUBLICATION

Automatic Image Segmentation for Lung using Deep Learning and Convolutional Neural Network | Paper

2024

Keywords: PyTorch, U-Net, Image Segmentation, Dice/Jaccard, preprocessing

- Built and evaluated a U-Net lung-segmentation model using Dice and Jaccard; trained on ~800 chest X-rays (704 with masks) with preprocessing and train/val/test splits.