

JAY HEMNANI

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Gujarat, India (Open to Relocate)

Education

Pandit Deendayal Energy University (PDEU)

2018 – 2022 | Gandhinagar, India

B.Tech in Computer Engineering | GPA: 8.7/10

- **Coursework:** Computer Vision, Natural Language Processing, Big Data Analytics, Neural Networks.
- **Publications:** 2 IEEE papers — Diabetes Prediction (Stacking Classifier), CPU Scheduling Analysis.

Technical Skills

Programming: Python, SQL, Java, C++, JavaScript/TypeScript

ML/AI Frameworks: PyTorch, PyTorch Geometric, TensorFlow, Scikit-learn, Hugging Face Transformers, YOLOv8

ML Engineering: FAISS, LangChain, LangGraph, Vector Databases (Pinecone, ChromaDB), RAG Pipelines, Feature Engineering

Data Processing: Pandas, NumPy, PySpark, Apache Kafka, Airflow

Cloud & MLOps: AWS (SageMaker, Lambda, S3), Docker, Kubernetes, MLflow, DVC, Weights & Biases

Databases: PostgreSQL, MongoDB, Redis, TimescaleDB, ChromaDB, Pinecone

Experience

Data Analyst, *Elite Hotel Group*

Summer 2025 | San Jose, CA

- Developed **demand forecasting models** using time-series analysis and regression techniques, improving booking prediction accuracy for dynamic pricing optimization.
- Built **automated ML pipelines** for KPI prediction and anomaly detection across multi-property analytics workflows.

Technical Consultant,

2022 – 2024 | Remote

- Provided **ML and data analytics consulting** for small businesses, building predictive models, A/B testing frameworks, and automation solutions.

AI/ML Intern, *Amnex*

Jan – May 2022 | Gujarat, India

- Built **credit fraud detection system** using ensemble ML (Random Forest, XGBoost) with SMOTE for class imbalance, achieving **94% precision** on imbalanced transaction data.
- Developed **statistical models** for operational reporting, automating anomaly detection and KPI forecasting pipelines.

Software Engineering Intern, *Cactus Creatives*

May – Nov 2019 | Gujarat, India

- Built **cloud-native backend services** on Azure; configured **CI/CD pipelines** reducing deployment time by **60%**.

Projects

Soccer Vision Research — Multi-Model Sports Analytics | *Python, PyTorch, RF-DETR, SAM2, W&B*

- Built **modular CV pipeline** combining 4 SOTA models (RF-DETR for detection, SAM2 for segmentation, SigLIP for classification, ByteTrack for tracking) with configurable model swapping.
- Implemented **experiment tracking** with Weights & Biases for systematic benchmarking across model configurations and hyperparameter sweeps.
- Designed **extensible architecture** enabling rapid experimentation — new model variants integrate via standardized interface without pipeline changes.

Nobel Data Intelligence — Graph Neural Networks | *Python, PyTorch Geometric, BioPython, RDKit*

- Built **GNN-based molecular property prediction** framework processing 10K+ compounds with PyTorch Geometric for graph-level regression tasks.
- Integrated **bioinformatics toolkits** (ProDy, BioPython, RDKit) for feature extraction from protein structures and molecular graphs.
- Designed **extensible data pipeline** converting molecular SMILES to graph representations with configurable node/edge feature engineering.

BarcaBrain — Vector Search Intelligence | *Python, FAISS, LangChain, Streamlit*

- Designed **vector embedding pipeline** with feature engineering on match events, generating dense embeddings for 10,000+ players.
- Implemented **FAISS k-NN index** for semantic similarity search achieving **<100ms latency** with hybrid filtering for role/league constraints.