Yadunandan M Nimbalkar

139, Amarjoythy Nagar, Bengaluru – 560079
+91 8197288398 | yadunandanmn@gmail.com | linkedin.com/in/yadunandan-m-nimbalkar | github.com/Yadu080

Summary

AI/ML-focused Computer Science student with hands-on experience in deep learning, recommendation systems, NLP, and computer vision. Skilled in building end-to-end ML pipelines, model deployment via REST APIs, and feature engineering using modern frameworks including PyTorch, TensorFlow, and FastAPI. Proven ability to deliver production-grade, Dockerized applications with measurable performance gains.

Education

Global Academy of Technology — Bengaluru, India
B.E. in Computer Science & Engineering — Specialization in AI & ML | CGPA: 8.85/10 — *Aug 2023 – May 2027*
- **Relevant Coursework:** Data Structures & Algorithms, Machine Learning, Artificial Intelligence, Data Science, Operating Systems, DBMS, Cloud Computing, Software Engineering, Data Mining & Warehousing

Technical Skills

Languages: Python (Advanced), C, Java, JavaScript, HTML/CSS
ML/AI: TensorFlow, Keras, PyTorch, Scikit-learn, XGBoost, LightGBM, HuggingFace Transformers, OpenCV, NLP, Computer Vision, Deep Learning, FAISS, Optuna, SHAP, Feature Engineering, Statistical Modeling, Model Deployment
Frameworks & Libraries: FastAPI, Flask, React, Streamlit, Sentence-Transformers, NumPy, Pandas, REST APIs
Tools & Platforms: Git, GitHub, Docker, Azure, Google Colab, Jupyter Notebook, VS Code, PyCharm, MLOps
Databases: MySQL, MongoDB

Projects

Two-Tower Recommendation System | *Python, PyTorch, FAISS, FastAPI, React, GBM, Optuna*
- Engineered end-to-end personalized movie recommendation system trained on **25M ratings** (MovieLens), mapping users and items into a shared 128-dim embedding space using InfoNCE loss with in-batch negatives.
- Built GBM re-ranker (Val AUC = **0.9799**) with genre-based explainability; FAISS IVF index delivers **4.5x faster** retrieval than brute-force at 99.8% recall; LRU cache achieves **55% hit rate** with 0 ms latency for cached queries.
- Deployed FastAPI REST API serving layer with **median response 19 ms**; React (Vite + Tailwind) frontend; Recall@100 = 15.7%, NDCG@100 = 3.8% on 2,000 held-out users.

Parkinson's Voice Detection | *Python, PyTorch, wav2vec2-XLS-R-300M, XGBoost, LightGBM, Flask*
- Rebuilt a broken 4-person codebase from scratch; fixed **6 critical feature extraction bugs** including aliased Praat calls and subject data leakage; engineered a **56-feature** acoustic pipeline with 75 Optuna trials.
- Achieved **CV AUC = 0.972 ± 0.034** and **CV F1 = 0.945** via 5-fold subject-grouped cross-validation (no leakage) on 831 recordings; subject-level AUC = **0.996**, accuracy = **95.1%** (58/61 subjects).
- Deployed wav2vec2-XLS-R frozen embeddings for cross-lingual generalization; documented language-bias finding (Italian to UCI AUC = 0.31) as a reproducible cross-corpus experiment; Flask model deployment with statistical modeling and feature engineering pipeline.

AI Codebase Analyzer | *Python, FastAPI, FAISS, Streamlit, Groq API, Sentence-Transformers, AST*
- Designed and built a full **RAG pipeline** — repo loader, code chunker, FAISS vector store, LLM QA engine, and AST-based dependency graph — enabling natural language queries over any public GitHub repository.
- Implemented AST dependency analysis surfacing module-level import graphs; Streamlit frontend + FastAPI backend for seamless developer experience.

ASD Early-Screen | *Python, Scikit-learn, SHAP, Flask, AES-128 (Fernet), IBM LinuxONE | IBM Z Datathon 2025*
- Built ASD risk-screening ML pipeline with per-prediction **SHAP explainability**; implemented AES-128 artifact encryption (model + scaler decrypted in-memory only) and SHA-256 audit logging with zero PII storage.
- Deployed live on **IBM LinuxONE** during IBM Z Datathon 2025; achieved **390 ms** inference latency per prediction with full SHAP explanation.

Certifications

Introduction to Generative AI | *Google Cloud Skills Boost* — Aug 2024
Introduction to LLMs | *Google Cloud Skills Boost* — Aug 2024
Prompt Design in Vertex AI | *Google* — May 2025
Getting Started with Artificial Intelligence | *IBM* — Oct 2024

Achievements & Leadership

- **Hackathons:** Participated in IBM Z Datathon 2024 & 2025, Google Gen AI Hackathon 2026, PES CTF 2025, and Cognizant Technoverse Hackathon — built production-grade ML systems under competition constraints.
- **Head Boy (School Captain):** Led student body at Podar International School, Bengaluru (CBSE — Grade 11 & 12); managed school-wide initiatives and represented student interests to administration.
- **STEM Educator:** Taught Arduino and LEGO EV3 robotics to school children at National Hill View Public School, fostering hands-on engineering skills in young learners.