Vishnuvaradhan M

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Summary

Data Science and AI Engineer with hands-on experience building production-ready backend and AI systems at HELYXON Healthcare Solutions. Skilled in Python, machine learning, deep learning, RAG pipelines, computer vision, and scalable API development using FastAPI and MongoDB. Experienced in designing LLM-driven retrieval systems with a strong focus on reliability and performance. Seeking opportunities to contribute to AI engineering, data science, and LLM system development.

Education

Amrita Vishwa Vidhyapeetham Sep 2022 - Present
Integrated M.Sc · Data Science · Coimbatore 8.46/10

SSM Matriculation School Jun 2021 - Jun 2022
Higher Secondary Education · Computer Science 93.2/100

SSM Matriculation School Jun 2019 - Jun 2020
Secondary Education 79.8/100

Experience

HELYXON Healthcare Solutions Pvt. Ltd Sep 2025 - Present
Data Science Intern · Remote · 6 months

- Contributing to the development of internal AI-driven platforms and working on a capstone project focused on safe document-grounded question answering using Retrieval-Augmented Generation (RAG) and a multi-agent architecture.
- Developed backend modules including ticket creation and automated round-robin agent assignment using MongoDB atomic updates, Postman testing, and structured API response handling.
- Built production-ready REST APIs for email template and campaign management with secure JWT authentication, enabling reusable templates and reducing manual configuration time.

Projects

HR & Career Growth Copilot - RAG-based Onboarding Assistant Nov 2025 - Present
· RAG, Ollama LLM, FAISS, SentenceTransformers, MongoDB, FastAPI Artificial Intelligence / NLP

· Designed a RAG pipeline using FAISS + SentenceTransformers for semantic HR document retrieval.
· Integrated a local LLM (Ollama) for offline, privacy-preserving inference.
· Built role-aware, citation-supported responses and personalized learning recommendations.

Few-Shot Text Classification Using PEFT (BERT, RoBERTa) Nov 2025 - Present
· Python, PEFT Library, BERT, RoBERTa, LoRA, Prompt Tuning Natural Language Processing (NLP) / Low-Resource Learning

· Built benchmarking pipelines to compare LoRA, Prompt Tuning, Hybrid PEFT, and full fine-tuning across AGNews, SST-2, and TREC.
· Implemented stratified sampling for 8/16/32/64-shot setups and automated training workflows.
· Analyzed accuracy and efficiency trade-offs with visualizations to assess parameter savings and model generalization.

Dual-Path YOLO Pedestrian Tracking with Hybrid Feature Selection Oct 2025 - Dec 2025
· YOLOv8, ByteTrack, DeepSORT, Python, OpenCV, RandomForest, Sklearn Computer Vision / Deep Learning

- Developed a real-time pedestrian tracking pipeline using YOLOv8 + ByteTrack, reducing ID-switch rate through a Dual Tracker Fusion Gate mechanism.
- Designed a Fusion Gate to dynamically select the best tracker per frame for reducing ID-switch errors.
- Engineered a structured dataset of 8,082 YOLO annotations and applied hybrid feature selection

Multi-Objective Deep Learning Framework for Telecom Churn Prediction and Customer Value Optimization Jan 2025 - May 2025

· Python, TensorFlow, Scikit-Learn, Pandas, DEAP (NSGA-II) Predictive / Customer Analytics

- Built a deep learning model on 90-day sequential data (65K users), achieving AUC ≈ 0.9998 and 99.8% churn recall.
- Created 3D temporal feature tensors (90×33) and integrated CLV modeling for profitability-aware churn decisions.
- Applied NSGA-II to optimize churn reduction vs. retention cost, generating actionable retention strategies.

Champions Trophy Analysis | Data Analysis Report Jan 2025 - Apr 2025

· Numpy, Pandas, Matplotlib, Seaborn Data Analysis

- Applied statistical analysis and visualization to evaluate team performances, venue conditions, and match strategies in Champions Trophy matches.
- Assessed whether five spinners were necessary by analyzing spin vs pace effectiveness in Powerplay, Middle Overs, and Death Overs
- Identified winning patterns, venue-based trends, and optimal bowling strategies, providing data-backed insights for strategic decision-making

Skills

Skills: Python, Deep Learning, Machine Learning, NLP and Embeddings, RAG (Retrieval-Augmented Generation), Computer Vision (YOLOv8, ByteTrack, DeepSORT), Feature Engineering, FastAPI, Pandas, Power BI, SQL, NumPy

Languages

English [Limited Working Proficiency], Tamil [Native Proficiency], Kannada [Native Proficiency]

Links

GitHub, LinkedIn