Nandana S

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PROFESSIONAL SUMMARY

AI/ML Engineer with 1+ years of experience building real-time ML models, LLM/RAG solutions, and managing time-series databases. Proficient in Python, SQL, with a strong academic background in AI and Mathematics.

EXPERIENCE

Associate Engineer   *July 2024 – November 2025*
Larsen & Toubro - Hyderabad

- Developed an XGBoost model, processing dynamic inputs from a Redis channel and delivering low-latency predictions, optimizing performance through hyperparameter tuning, model evaluation, and cross-validation, with outputs published back to the Redis channel for efficient real-time data handling.
- Managed SQL databases, handled the migration from MySQL to PostgreSQL with TimescaleDB integration, ensuring data integrity through Liquibase for schema version control and performance improvements.
- Experimented with Redis TimeSeries for evaluating memory caching and optimizing time-series data storage, reducing RAM usage by 60%.
- Conducted data analysis leveraging SQL and Python to process and validate large datasets, and apply statistical methods and data visualization tools.

PROJECTS

- **Aroma Detection: Study on Olfactory Science using AI**: Scent digitization to develop a robust aroma detection system capable of distinguishing diverse smells using deep learning methods.
- **Ship Movement Detection**: Implemented ship movement detection via wake analysis using Faster R-CNN.
- **AI Search Optimization and Assisted Cataloging**: Developed AI-assisted LMS with voice search and assisted cataloging in Koha, enhancing search accuracy by integrating ML for search term classification.
- **Blind spot Detection**: Developed a blind spot detection system using ESP-32 cam and YOLOv3 object detection algorithm for real-time identification of objects and potential collision prevention.
- **Music Recommendation Bot**: A Discord chatbot that recommends music by deciphering user mood and emotions, utilizing sentiment analysis with TextBlob.

TECHNICAL SKILLS

- **Languages**: Python, SQL
- **Machine Learning Frameworks**: Scikit-learn, TensorFlow, Keras, PyTorch
- **Deep Learning**: Neural networks, GAN, Transfer Learning, LSTM, Autoencoders, LLM, RAG
- **Data Analysis and Visualization**: Pandas, NumPy, Matplotlib, Seaborn
- **Mathematics and Statistics**

CERTIFICATIONS

- Deep Learning for Computer Vision, NPTEL
- Computer Vision and Image Processing, NPTEL
- Cambridge Business English Certificate (BEC) Preliminary

ACHIEVEMENTS

- GATE AIR 2041, DA-'24
- Secured third position in Tink-her-hack, Kerala's largest women-only hackathon conducted by TinkerHub
- Published paper on Aroma Detection, presented at the Research Conclave on Global Transformation, NIT Calicut; published in Springer (2025)

EDUCATION

Muthoot Institute of Technology and Science   *2020 – 2024*
B.Tech (Hons.) in Computer Science - AI
CGPA: 9.42/10.0 | Minor in Mathematics | Honors in Computer Vision