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SKILLS

Languages: Python, SQL
Machine Learning: Linear & Logistic Regression, Decision Trees, Boosting, SVM
Deep Learning: ANN, CNN, RNN, LSTM, GRU, Transformers (from scratch & PyTorch)
Data & Analytics: Pandas, NumPy, Feature Engineering, EDA
Backend & DB: PostgreSQL (Supabase), SQLAlchemy
Visualization: Streamlit, Matplotlib, Seaborn
Engineering Concepts: Data Pipelines, Drift Detection, Schema Migration, Idempotent Systems

PROJECTS

DSA Analytics & Learning Drift Detection

System: <https://github.com/anshupatna06/DSA-Analytic-System>

Python | PostgreSQL | Streamlit | SQLAlchemy

- Designed and deployed an end-to-end analytics system to track real-world coding activity with week-safe aggregation.
- Designed date-driven week logic using `week_start_date` to ensure correct aggregation despite irregular pipeline runs.
- Implemented feature engineering including lag features, rolling growth, ratios, and consistency metrics.
- Developed a learning drift detection system to identify inactivity, sudden drops, and declining trends.
- Led a production database migration from MySQL to PostgreSQL (Supabase), resolving auto-increment, transaction, and schema incompatibilities.
- Implemented idempotent ingestion logic to prevent duplicate daily snapshots.
- Added data retention policies to automatically clean old records and maintain long-term system stability.
- Built an interactive Streamlit dashboard with leaderboards, visual analytics, and drift alerts.
- System currently supports multi-platform user tracking with automated weekly aggregation and drift alerts.

LLM-RAG Document QA: <https://github.com/anshupatna06/LLM-RAG-Document-QA>

- Implemented a Retrieval-Augmented Generation (RAG) system for
- document question-answering using embeddings and vector search
- Designed chunking, retrieval ranking, and prompt pipelines
- Tech: Python, LLMs, Vector DBs, Embeddings

CNN from Scratch (PyTorch): <https://github.com/anshupatna06/CNN-From-Scratch-Project>

- Implemented Convolutional Neural Networks from scratch in PyTorch
- with modular training, evaluation, and model architecture design
- Demonstrated understanding of backpropagation, convolutions,
- and optimization beyond high-level APIs

Machine Learning & Deep Learning (Scratch Implementations)

Python, NumPy, PyTorch

- Implemented Regression, SVM, Decision Trees, and Boosting algorithms from scratch to understand optimization and learning dynamics.
- Built Artificial Neural Networks (ANN) from scratch with manual forward and backward propagation.
- Implemented CNN architectures from scratch and in PyTorch, understanding convolution, pooling, and normalization.
- Implemented RNN, LSTM, and GRU models to learn sequence modeling and temporal dependencies.
- Studied and implemented Transformer fundamentals, including attention, encoder-decoder flow, and recurrence alternatives.

EDUCATION

Bachelor of Technology (B.Tech)

Gurukul Kangri Deemed To Be University | 2024

DATA STRUCTURES & ALGORITHMS

- Solved hundreds of DSA problems on LeetCode across arrays, strings, trees, graphs, DP, and sliding window patterns.
- Focused on pattern recognition and optimization techniques rather than brute-force solutions.
- Maintained a consistent public learning log through a LinkedIn "100 Days of DSA & ML" series.

