Panam Dodia

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SKILLS & INTERESTS

Programming Languages: Python (Pandas, NumPy, Matplotlib, Seaborn, Plotly), SQL, Matlab
Machine Learning Libraries: Scikit-learn, TensorFlow/Keras, PyTorch, Langchain
Business Intelligence (BI) Tools: Excel, Power BI, Tableau Database
Management Systems: MySQL, SQLite Big Data
Big Data Technologies: Hadoop, Spark, Cassandra, Hive, HDFS
Cloud Services: AWS, Azure, Google Cloud Platform, SageMaker

PROFESSIONAL EXPERIENCE

TnS10X.ai   **Denton, Texas, US**
AI Engineer   *August 2025 – September 2025*
- Developed **Gmail add-on** using **Google Apps Script** and **OpenAI GPT-3.5 API**, achieving **95% accuracy**.
- Architected **pattern recognition system** for sender behavior analysis using **Google Properties Service**, implementing **dynamic context injection** for **personalized filtering** and **real-time correction learning**, reducing unwanted emails by **90%**.
- Built **full-stack solution** with **CardService UI**, **clasp CI/CD integration**, and **hourly time-based triggers**, deployed across multiple accounts with **auto-scaling capabilities,** handling **30,000+ emails monthly**.

University of North Texas   **Denton, Texas, US**
Research Assistant   *May 2024 – Present*
- Integrated **DaCLIP** framework with **Sparse Autoencoder** for **CLIP** feature enhancement in universal image restoration, achieving **+2.89 PSNR improvement** over baseline models across multiple degradation types.
- Engineered **dense feature** enhancement networks using **PyTorch**, implementing differentiable sparsity mechanisms and **optimized hyperparameters** for better results in degradation-aware features.
- Developed novel **loss functions and regularization techniques** to optimize model training and improve the robustness of image restoration for various degradation types (e.g., noise, blur, rain).

AdTech   **Surat, Gujarat, India**
Machine Learning Engineer   *Jan 2022 – June 2023*
- Architected and deployed ML models using **PyTorch** and **TensorFlow**, improving accuracy by **18%.**
- Collaborated with **cross-functional teams** to engineer custom features from raw data using advanced **feature selection techniques**, improving model performance by **24%.**
- Built and maintained **CI/CD pipelines** on **AWS** using **GitHub Actions,** reducing deployment time by **60%.**
- Managed and optimized cloud resources (**EC2, S3, SageMaker**) on **AWS** to support ML model training, inference, and data storage, ensuring cost-efficiency.

PROJECTS

Intelligent Document RAG System
- Engineered **RAG** system with **LlamaIndex**, implementing **VectorStoreIndex** for document processing and semantic search, reducing query response time by **42%** while improving answer relevance by **37%.**
- Leveraged **OpenAI's API** to generate **contextual responses** based on the information retrieved from document.
- Constructed **pipeline** - combines custom **query engine** with document ingestion workflow, converting **unstructured text** into searchable **vector embeddings**, resulting in **93% accuracy** on complex queries.

Spiritual AI Chatbot with RAG & Safety Systems
- Built full-stack AI platform using **Python FastAPI, React TypeScript, OpenAI GPT-4 API**, and **LangChain RAG framework** with **ChromaDB vector database**, processing document for multi-tradition spiritual guidance.
- Managed crisis detection system with **OpenAI API** and custom prompt engineering for **self-harm prevention**, logging flagged content to **PostgreSQL database**, and providing immediate mental health resources.
- Deployed application with **Docker containerization, JWT authentication, RESTful APIs**, and multi-container orchestration, featuring document upload validation and real-time content filtering.

Predictive Analytics for Electronics Store Sales
- Optimized **HDFS** by loading and preprocessing datasets with **Spark**, then storing them in an **S3 bucket** on **AWS**.
- Established **end-to-end pipeline** and engineered **EDA** using **Hive** and **Spark SQL**, uncovering customer purchasing trends and sales patterns.
- Generated a **recommendation engine** to provide **personalized suggestions**, improving customer experience.
- Trained models with **Spark MLlib**, with **91.06% accuracy** in sales forecasting and improving decision-making.

EDUCATION

University of North Texas   **January 2024 – December 2025 (Expected)**
Masters in Artificial Intelligence   **GPA – 4.0**
- **Relevant Courses:** Machine Learning, Software Development for AI, Pattern Recognition, Feature Engineering, Big Data and Data Science, Methods of Empirical Analysis, Natural Language Processing, Deep Learning

Veer Narmad South Gujarat University   **June 2018 – July 2021**
Bachelor of Computer Application   **GPA – 3.2**

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