


Aravinth Bose M

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SKILLS

Languages & Tools: Python, SQL, Keras, TensorFlow, OpenCV, Scikit-learn, FastAPI, Flask, Pandas, NumPy, Seaborn, Matplotlib, Plotly, Streamlit, Git

Machine Learning & Data Science: Supervised/Unsupervised learning, Deep Learning, Neural Networks, Regression/Classification, Clustering, Regularization, Hyperparameter Tuning, Transfer Learning, CNN, NLP, OCR, Feature Engineering, Data Cleaning, Data Mining, Statistics, Data Visualization

GenAI: Open/closed source LLMs, Fine-tuning, RAG, Multimodal Input/Output, Milvus, FAISS, Pinecone, LangChain, Prompt Engineering

WORK EXPERIENCE

AI/ML Engineer | Walmart | Tata Consultancy Services, Chennai

OCT 2021 – Present

Insights Bot: LLM-Driven Interactive SQL Query and Insight Generation System

- Developed a dynamic SQL query generation system utilizing OpenAI LLM, translating user questions into precise SQL queries across 10 tables. Achieved over 90% accuracy through comprehensive query validation prior to execution.
- Designed and integrated a mechanism that converts database data into natural language responses and interactive charts, significantly enhancing user engagement. This approach resulted in over 70% time savings for business users in data analysis and decision-making.

Claims and Disputes Optimization: Enhancing Resolution Through Recommendation Systems

- Implemented a machine learning project in the fintech domain, developing prediction engines using tree ensembles like Random Forest and XGBoost to assess the likelihood of claims leading to disputes and predict their approval or denial. This enhancement improved predictive capabilities, reduced financial risk, and significantly increased the efficiency of resolving open disputes.
- Streamlined claims management by clustering data points to identify diverse use cases, expediting dispute resolution and significantly reducing manual efforts.

Computer Vision Solution for Retail Claims Processing

- Developed an end-to-end computer vision system to streamline retail claims processing by automating the extraction of key data from Bills of Lading (BOL) documents, resulting in a 80% reduction in processing time.
- Fine-tuned a ResNet50 deep learning model to accurately classify characters within documents, achieving over 95% accuracy in information identification critical for claims processing.
- Utilized Pix2Struct and docTR models to effectively extract and structure data post-classification, ensuring reliable and organized information retrieval from complex document layouts.

Contact Center Migration

- Led the migration of Walmart's customer service system from Avaya to Google Dialogflow, transitioning user experience from DTMF to voice-based interactions. This shift reduced wait times by over 70% and significantly enhanced customer satisfaction through seamless call transfers.
- Integrated webhooks within Dialogflow for database connectivity and context-based actions, implemented an alerting mechanism, and automated processes to expedite project timelines, ensuring a more efficient system overall.

AWARDS & ACHIEVEMENTS

- **Star Team Award** Acknowledged for exemplary teamwork and collaboration.
- **Technical Excellence Award** Demonstrated technical proficiency through successful participation in hackathons and ideathons.
- **Applause For Team Award** Acknowledged for achieving a 100% Customer Satisfaction Index (CSI).
- **Star Performer Award** Honored for exceptional performance and contributions.
- **Best Project Award (College)** Recognized for outstanding project work during college.

EDUCATION

Bachelor of Engineering in Electronics and Instrumentation
Karpagam College of Engineering, Coimbatore

8.19/10 CGPA
2017 - 2021