# PALANI PRASHANTH B

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## PROFESSIONAL SUMMARY

Highly motivated master's student in Computer Science Engineering specializing in Big Data Analytics. Adept at leveraging advanced technologies and data-driven approaches to create impactful solutions across the entire data lifecycle, from ingestion to security. Proven ability in designing and developing innovative projects, including AI-based assessment systems, sentiment analysis, facial recognition, and IoT environmental monitoring, with a notable contribution to an AI drowning detection system. Proficient in core big data frameworks, diverse database systems, and advanced analytics, with a demonstrated interest in data engineering security and performance optimization.

## TECHNICAL SKILLS

- **Big Data & Cloud Platforms:** AWS, GCP(Google Cloud Platform), Azure
- **Databases & Data Analytics:** SQL (MySQL), NoSQL (MongoDB), Data Warehouses (Big Query), Tableau, Matplotlib, ELK Stack (Elasticsearch, Logstash, Kibana)
- **Programming & Machine Learning/AI:** Python ,Lang Chain, Grok, T5, TensorFlow, YOLO, OpenCV, Computer Vision, NLP
- **Tools & Security:** Data Security (Encryption, Access Control), Git/GitHub, Cloudflare Tunnel, Arduino

## PROJECTS

- **AI-Powered Welding Groove Analysis System using YOLOv8:**Developed an AI-driven system using YOLOv8-pose for key point detection (annotated with CVAT) to analyze U & V welding grooves, computing weld metrics and filler volume. Built a Gradio interface for image and video analysis to improve welding precision and quality control.
- **Agentic-AI Based Question Paper Generation:** Developed an AI platform using Grok, Lang Chain, and T5 models for MCQ generation from PDFs, achieving 97% precision and 94% recall. Utilized spaCy for knowledge graph creation, enhancing engagement by 15% and relevance by 20% via Bloom's Taxonomy, and visualized key metrics.
- **AI-Powered RAG Chatbot for Dynamic Document Q&A:** Developed a Retrieval Augmented Generation (RAG) system to transform static documents into an interactive knowledge base. The project features a Fast API backend for RAG operations, a Streamlit admin panel, and a Telegram bot for user interaction. It uses Lang Chain for orchestration, Groq's Llama3-8b-8192 for LLM inference, and HuggingFace Embeddings with ChromaDB for vector storage. The system was deployed publicly using Cloudflare Tunnel.
- **Tracing the Missing Person Using AI:** Built an AI system for facial recognition using TensorFlow, Scikit-learn, and YOLOv8, achieving 95% accuracy. Matched photos with real-time footage using OpenCV and computer vision; managed data with Python, Pandas, and MySQL.
- **Humidity and Temperature Detection:** Developed an IoT system using Arduino for real-time environmental monitoring.

## PROFESSIONAL DEVELOPMENT

- **Advanced Drone Technology Workshop** by **India Space Lab**.
- **UK-India Education and Research Initiative (UKIERI)** workshop.
- **Confederation of Indian Industry** volunteer.

## EDUCATION

- **MTech, Computer Science Engineering (Big Data Analytics)**, Vellore Institute of Technology, Vellore, India, 2023-2025
- **B.E, Computer Science Engineering**, Rajalakshmi Engineering College, Chennai, India, 2019-2023

## CERTIFICATIONS

- AWS Academy Cloud Foundations
- Robotics Training Program (Texas Instruments Kit)
- Advanced Drone Technology Workshop
- UKIERI Workshop Participation
- IBM Project: Virtual Eye - AI Drowning Detection