Siddamsetti Pavithra

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PROFESSIONAL SUMMARY

Highly skilled Software Engineer with a strong foundation in computer science, specializing in object-oriented programming, data structures, and algorithm design. Proficient in Java, Python, C, C++ with a proven track record of developing scalable, efficient solutions for complex business problems, including predictive analytics, detection, and supply chain optimization. Adept at collaborating with cross-functional teams to deliver high-quality code, adhering to industry standards, and producing clear technical documentation. Passionate about leveraging advanced information-retrieval techniques and elastic storage systems to enhance user experiences and drive operational excellence in large-scale applications.

Skills

- **Web Development:** HTML, CSS, JavaScript
- **Programming Languages**: Java, C++, C, Python, R
- **Databases:** SQL, MYSQL, PostgreSQL, MongoDB, FIASISS
- **Frameworks & Libraries:** Hadoop, PyTorch, React, NumPy , Pandas , Matplotlib ,Scikit-learn
- **Cloud Platforms:** Database Developer on Oracle Cloud
- **Data Analysis:** Power BI, IBM Cognos, Tableau
- **Data Structures**: Arrays, Linked Lists, Trees, Graphs, Hash Maps, Tries, Queues, Heaps
- **Algorithms**: Sorting, Searching, Dynamic Programming, Graph Algorithms, Pattern Matching, Predictive Modeling
- **Object-Oriented Programming**: Class Design, Encapsulation, Inheritance, Polymorphism, Modularity
- **Scalability & Performance**: Distributed Systems, Load Balancing, Elastic Storage, Multithreading.
- **Domains**: Predictive Analytics, Detections , Information Retrieval.
- **Other Skills:** Operating Systems (OS) ,DBMS , Problem Solving Skills (PS), Git, LLM's, Team Collaboration, Analytical Thinking.

Education

B.tech CSE Data Analytics,	XII 2019-2021 MPC,	X 2019,
Graduation Year (2025),	Percentage- 95.5%,	CGPA – 9.3,
Vellore Institute of Technology	New Vision(State Board)	New Vision(State Board)

PROJECTS

Project 1 : Optimizing Token Usage in LLMs: LLM vs. LCM Hybrid Analysis:

This project automates token efficiency analysis for LLMs (GPT-4, LLaMA, Falcon) vs. LCM and hybrid models (LLM + LCM), evaluating token usage, computational cost, and inference speed. It identifies the most efficient, low-cost model while maintaining high accuracy across tasks like summarization, reasoning, and coding. Tech Stack: Python, Hugging Face, OpenAI API, PyTorch, LangChain.

Project 2 : Extreme Database Design & Query Optimization:

This Designed a high-performance MySQL database with sharding, partitioning, and replication for a scalable fintech platform. Implemented real-time financial analytics using indexed tables, materialized views, and optimized queries. Developed a secure backend with GraphQL APIs, ensuring AES-256 encryption. Built a React.js frontend for real-time portfolio tracking, transactions, and market analytics. Deployed on GCP ensuring high availability, fault

tolerance, and auto-scaling.

Project 3 : Fraud Detection System using LLM Embeddings:

Developed a real-time fraud detection system using GPT-4, and FAISS for anomaly detection in 100 M+ financial transactions. Integrated MongoDB and a vector database for high-speed similarity search, enabling efficient fraud pattern analysis. Built a scalable pipeline with Kafka and FastAPI, deploying on GCP with Kubernetes while ensuring security AES-256. Implemented real-time alerts via Twilio and developed a Next.js dashboard with GraphQL APIs for fraud monitoring.

Project 4 : Healthcare Analytics and Predictive Modeling:

Analyzed patient data to predict Breast Cancer Detection outbreaks and treatment outcomes using machine learning. Utilized Python (Pandas, Scikit-Learn, TensorFlow), SQL, and Tableau for data processing, modeling, and visualization. Improved patient care and resource allocation by providing personalized treatment recommendations.

Work Experience

Aug 2024 – Jan 2025 | ITHAS

• Designed and implemented scalable, high-performance backend architectures using Node.js, Python, and Go, optimizing database queries and API response times by 40%. Built and maintained microservices with Docker, Kubernetes, and cloud platforms, ensuring 99.99% uptime and secure data handling.

CERTIFICATIONS

- Database Developer on Oracle Cloud(Android App Development)
- Data Analytics with IBM cognos Analytics(Power BI, Tableau)
- Course completion certificate from Coursera in Matlab

RESEARCH PAPER

- Published a Research paper on Breast Cancer Detection using ML Hybrid Algorithms (2025 4th OPJU International Technology Conference (OTCON))

ACHIEVEMENTS/AWARDS

- 2nd DIMO Hacks (Blockchain based hackathon)
- Finalist in MSME Women Hackathon 3.0
- Participated in Geekify hackathon.
- 2nd Place in MAKE-A-THON By IET.