Amogh P

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SUMMARY

Software Engineer with strong foundations in C++, Python, SQL, and distributed systems. Hands-on experience building, benchmarking, and optimizing real-time data pipelines built with Kafka, Spark, and scalable data stores. Skilled in building automation workflows, validating system behavior under load, analyzing failures, and modeling production-like workloads — aligned with core engineering roles in high-performance, distributed database environments.

TECHNICAL SKILLS

Languages: Python, C++, C, SQL.
Distributed Systems & Data: Apache Spark, Kafka, Airflow, Hadoop, AWS.
Databases: MySQL, PostgreSQL, SQLite, MongoDB.
Concepts: Distributed Systems, Stream Processing, Data Modeling, ML Pipelines, ETL, System Design, DSA.
Dev & Collaboration: GitHub, VS Code, Jupyter, Google Colab, Notion, Linux.

SELECTED ENGINEERING PROJECTS

PulseCity AI — Real-Time Urban Intelligence System | *Gemini, Firebase, Maps, Multimodal AI*
- Built a Gemini-powered system that synthesizes noisy city data into clear, real-time event summaries.
- Implemented multimodal reporting with automatic analysis of geo-tagged photos/videos.
- Designed a predictive alert engine to surface emerging traffic, outage, and safety patterns using SQL streams.

Distributed Realtime Event Streaming Engine | *Kafka, PySpark, JavaScript*
- Engineered a **real-time sentiment analysis engine** capable of processing millions of emoji reactions per second.
- Benchmarked and optimized **batch vs. stream-processing architectures**, reducing latency by 42%.
- Visualized **model outputs and performance metrics** to improve scalability and design decisions.

MCP-TerminalAI: Automation Agent | *Python, LangChain, Playwright*
- Developed a CLI automation agent with **workflow orchestration** using natural-language commands.
- Integrated APIs (DuckDuckGo, Airbnb) and built automated validation for response correctness and error recovery. Improved execution reliability using targeted prompt-engineering and failure-pattern analysis.

Multi-Pollutant Analytics — Data Integrity & System Validation | *ML, GIS*
- Performed **data integrity testing** across multi-source pollutant datasets (correlations, imputation checks, temporal consistency).
- Built GIS visualizations to validate spatial distribution correctness and hotspot detection across regions.
- Developed a stacked model (MLP + CatBoost + FT-Transformer) reaching **76% accuracy**; validated robustness using cross-validation and error analysis.

STRENGTHS & ACHIEVEMENTS

- Built reliable, high-performance Kafka–Spark–SQL pipelines for real-time data processing.

- Strong in DSA, OOP, and System Design for developing and scaling distributed systems.

- Participated in a national-level hackathon developing an AI storytelling system with real-time content generation.

- Solved 290+ LeetCode problems; earned **HackerRank Problem Solving (Intermediate)** certificate.

- **Captain of district and zonal-level cricket team**, demonstrating leadership, collaboration, and ownership.

EDUCATION

PES University	Nov 2022 – May 2026
B.Tech in Computer Science and Engineering	*GPA: 8.02*
Siddaganga PU College	Aug 2020 – May 2022
Higher Secondary Education	*Percentage: 94%*