Mohammed Mutee Ruknuddin

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Profile Summary

Results-driven Software & AI Engineer combining deep expertise in distributed systems with scalable machine learning architectures. Proven track record of owning end-to-end ML deployments, from building highly accurate predictive models to optimizing core infrastructure for global open-source ecosystems (Kubernetes). Highly proficient in Python, AWS infrastructure, and modern AI frameworks (PyTorch, TensorFlow, XGBoost, LangChain). Customer-obsessed problem solver equipped to deliver high-performance, intelligent software systems at massive scale.

Education

KL University Guntur, India
Bachelor of Technology in Computer Science and Engineering *Expected May 2027*

- **Academic Standing:** CGPA: 8.8 / 10.0
- **Core Coursework:** Data Structures & Algorithms, Machine Learning, Deep Learning, Distributed Cloud Systems.

Technical Skills

Languages: Python, C++, SQL, Bash, JavaScript
AI/ML & Frameworks: PyTorch, TensorFlow, XGBoost, LangChain, RAG, Scikit-Learn, Pandas, FastAPI, Django
Data & Vector DBs: FAISS, PostgreSQL, MySQL, Vector Embeddings, Semantic Search
Cloud & DevOps: AWS (EC2, S3, RDS), GCP, Docker, Kubernetes, Git, CI/CD, Linux, System Observability

Systems Engineering & Open Source Contributions

Kubernetes (K8s) Core — Open Source Contributor Jan 2026
Distributed Systems Optimization & Reliability

- Diagnosed and resolved a critical resource exhaustion bug (Issue #136121) that caused 13+ hour processing timeouts, demonstrating deep architectural understanding of massively scaled distributed environments.
- Refactored core parsing logic to enforce thread-safe serial execution, fundamentally improving memory utilization and eliminating severe Out-Of-Memory (OOM) race conditions.
- Delivered measurable outcomes by merging infrastructure updates (PR #136124) via Git, successfully reducing automated CI/CD pipeline runtime to $<$**6 minutes**.

AI & Machine Learning Projects

Traffic Impact Forecaster (Pro) | ***Python, XGBoost, Generative AI, APIs***

- Engineered a production-ready predictive engine using **XGBoost** (achieving **94% accuracy**) fused with real-time telemetry APIs (TomTom, OpenWeatherMap) to forecast and categorize urban traffic incident severity.
- Architected a fail-proof Generative AI command center utilizing NVIDIA NIM LLMs, implementing a robust auto-fallback pipeline between **DeepSeek-V4** and **Mixtral-8x7B** to guarantee 100% system uptime during API rate limits.
- Deployed an interactive geospatial dashboard using **Streamlit** and **Folium**, integrating dynamic resource deployment logic and automated PDF reporting (‘fpdf2‘) for tactical incident response.

Sentinel: Autonomous Support Triage & RAG Infrastructure | ***Python, LangChain, FAISS, FastAPI***

- Architected an autonomous, AI-integrated classification system leveraging **LangChain** to parse, categorize, and route unstructured enterprise datasets via high-throughput REST APIs.
- Engineered a production-ready **Retrieval-Augmented Generation (RAG)** pipeline utilizing semantic embeddings and a **VectorDB (FAISS)** to guarantee sub-second, highly contextual data retrieval.
- Implemented an algorithmic string-matching auditor (‘rapidfuzz‘) to strictly validate LLM payload data, effectively eliminating AI hallucinations and ensuring 99% deterministic system correctness.

Autonomous Marketing Agent for MSMEs | ***Python, Gemini 2.5 Flash, Streamlit, Pandas***

- Engineered a multi-agent AI decision engine utilizing the **Google Gemini 2.5 Flash** API to autonomously analyze financial burn rates, inventory velocity, and competitor pricing telemetry.
- Architected a deterministic "Crisis Simulation" pipeline using **Pandas**, forcing the LLM to dynamically pivot from growth marketing to survival liquidation strategies during simulated market crashes.
- Developed an immutable "blockchain-lite" audit logging system to track all AI-generated actions (e.g., vendor reorder drafting, ad launch simulations), ensuring 100% operational transparency and compliance.

AWS & AI Certifications

AWS Certified AI Practitioner: Validated expertise in building, deploying, and maintaining AI/ML models on AWS.
AWS Certified Cloud Practitioner: Strong foundation in AWS cloud infrastructure, security, and scalability.
Automation Certifications: Automation Anywhere Certified Advanced Automation Professional.