AKSHAY KUMAR ANANDESI

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PROFESSIONAL SUMMARY

Senior AI Engineer with 8+ years of software engineering experience and 4+ years specializing in Generative AI and AI platform architecture. Combines strong backend and distributed-systems expertise with hands-on experience in RAG, LLM evaluation, agentic workflows, and enterprise AI platforms, architecting solutions such as ValOps and ValTest for AI validation and monitoring at scale. Inventor on a pending U.S. patent for real-time GenAI monitoring, with demonstrated impact including an 83% reduction in model-validation cycle time, 50% reduction in AI application development lifecycle, and leadership of a 4-engineer team.

PATENTS

Real-time Monitoring of GenAI and Agentic Models at Scale | ***Patent Pending (U.S. Provisional, Filed 2026)***
Designed a scalable architecture for the continuous monitoring and evaluation of Generative AI applications and agent-based workflows to ensure enterprise-grade compliance and reliability in production.

TECHNICAL SKILLS

Programming & Core: Python, Java, SQL, Data Structures & Algorithms, System Design (HLD/LLD)

AI & ML Engineering: RAG Pipelines, LLM Evaluation, Agentic AI, Agentic Systems & Workflows, LangChain, PyTorch, Hugging Face, Scikit-learn, NumPy, Google ADK, NLP, Model Validation, Model Serving, LLM-as-a-Judge, Prompt Engineering, Hallucination Detection

Backend & Distributed Systems: FastAPI, Spring Boot, Django, Pydantic, gRPC, Apache Arrow Flight

Tools & Platforms: REST APIs, Docker, Kubernetes, Conda, Linux, Elasticsearch, Kibana, Redis, MongoDB, MySQL, Oracle, Apigee, Jira

PROFESSIONAL EXPERIENCE

Wells Fargo — Senior Quantitative Analytics Specialist *Jun 2023 – Present | Hyderabad, India*

- **AI Validation Ecosystem:** Designed and developed ValOps, a core library that abstracts diverse model frameworks into a standardized interface for enterprise-wide validation of 100+ production models.
- **Multi-Framework Integration:** Standardized the validation lifecycle across ML, SAS, LLM, RAG, and agentic architectures built on Scikit-learn, H2O, DataRobot, SAS, Hugging Face, and Tachyon.
- **High-Performance Data Bridge:** Engineered a secure **Transponder protocol** using **Apache Arrow and gRPC,** facilitating the compliant, high-speed transfer of large-scale models and datasets across restricted enterprise environments.
- **Decoupled Validation Architecture:** Developed a specialized Transponder Client that allows independent Validators to connect seamlessly to wrapped models, eliminating direct data dependencies and resolving complex environment fragmentation.
- **Standardized Evaluation (ValTest):** Built ValTest, a unified library for LLM and model validation that incorporates an **LLM-as-a-judge approach** to automate hallucination detection, toxicity, and fairness metrics.
- **Model Risk Oversight Engine:** Led the architecture and development of a real-time Model Risk Oversight Engine for evaluating and continuously monitoring RAG applications and agentic systems, integrating ValOps and ValTest with automated alerting and batch evaluation of custom data.
- **Technical Leadership:** Led and mentored a team of 4 engineers, guiding the development of scalable validation infrastructure and governance-compliant AI systems.

Key Impact

- **Efficiency:** Reduced enterprise model-validation cycle time from **~3 months to 2 weeks** — an **83% reduction**.
- **Scalability:** Enabled scalable, automated annual validation of 100+ complex models across multiple business lines.

- **Architecture:** Resolved critical challenges involving environment fragmentation and restricted data access for cross-environment model validation.

Pegasystems — Senior Software Engineer – AI & ML

Aug 2021 – Jun 2023 | Hyderabad, India

- **LLM Integration & Efficiency:** Led the early adoption and integration of ChatGPT/LLM capabilities into enterprise workflows, enabling conversational AI features for end-users.
- **AI Framework Development:** Developed internal NLP frameworks within the Pega platform, allowing enterprise users to build and deploy their own ML-powered applications.
- **Security & Governance:** Designed and implemented a robust **PII data masking/unmasking system**, ensuring the secure and compliant handling of sensitive information in AI-driven interactions.
- **Scalable Infrastructure:** Built and deployed scalable microservices using Java Micronaut on AWS Kubernetes, leading to measurable improvements in platform performance and availability.
- **Enterprise Logic:** Developed reusable components using PRPC, including complex business logic layers, decision rules, SLAs, and automated flows.
- **Performance Optimization:** Performed deep-level debugging and optimization using PRPC tools such as Tracer, Clipboard, and Rules Inspector.

Key Impact

- **Velocity:** Cut custom AI development lifecycle by 50% via strategic LLM integration and reusable components.
- **Security & Compliance:** Secured enterprise conversational AI by automating PII detection and masking.
- **Platform Enablement:** Enabled users to self-serve and deploy ML capabilities via proprietary NLP frameworks.

Ernst & Young (EY) — Data Science Consultant

Dec 2019 – Aug 2021 | Hyderabad, India

- **Platform Architecture:** Led the development of an enterprise-level Data Governance and Email Compliance platform integrating data-processing, analytics, and privacy capabilities, reducing operational costs by 20%.
- **NLP & Deep Learning:** Built and deployed advanced NLP models for sentiment analysis and topic extraction via high-performance REST APIs.
- **Petabyte-Scale Pipelines:** Engineered highly scalable data pipelines capable of scanning petabytes of unstructured data, achieving a 98.9% accuracy rate in sensitive-data detection.
- **Business Growth:** Enabled 4x revenue potential by delivering high-accuracy forensic analytics and data-privacy solutions for global enterprise clients.
- **Insights & Analytics Dashboards:** Developed distributed microservices and interactive dashboards using Elasticsearch and Kibana to enable large-scale data discovery and investigation.

Amdocs India Development Centre — Software Developer

Aug 2018 – Dec 2019 | Hyderabad, India

- **Telecom OSS Development:** Developed mission-critical telecom OSS applications using Java, Spring Boot, and REST APIs.
- **System Stability:** Improved system performance and reliability through comprehensive JUnit and Mockito-based testing for third-party integrations.
- **Production Optimization:** Debugged and optimized production-grade systems to ensure scalability and high availability.

EDUCATION

- **Master of Technology | Data Science** | Birla Institute of Technology and Science (BITS), Pilani – 2022
- **Bachelor of Technology** | **Computer Science & Engineering** | Vardhaman College of Engineering – 2016

CERTIFICATIONS

- Oracle Certified Professional — Java SE | **Credential ID: OC1463738**
- Pega Certified Senior System Architect | **Credential ID: PEGA086897**
- Microsoft Technology Associate — C# & .NET | **Credential ID: F193-2205**