

Anu L Sasidharan

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SUMMARY

Results-driven Senior Technical Architect and AI/Data Engineering professional with over 13 years of experience, now targeting the role of Senior AI/ML Developer. Proven expertise in designing, implementing, and optimizing large-scale data infrastructure and AI systems across multi-cloud and on-prem environments, combining deep knowledge of Generative AI, Agentic AI frameworks, and LLM orchestration. Demonstrated success in developing end-to-end AI solutions, including data ingestion, feature engineering, and model deployment using LangChain, OpenAI APIs, Streamlit, and MLflow, with efficient vector database integration via FAISS, Pinecone, and Chroma. Skilled in building Python-based microservices using FastAPI, supported by CI/CD automation on Azure, AWS, and GCP. Adept in leveraging Docker and Kubernetes to streamline ML model lifecycle management and ensure scalable, production-grade deployments. Recognized for translating complex user requirements into strategic, secure AI-driven architectures, while applying strong communication, documentation, and decision-making skills to deliver robust ML pipelines and intelligent, data-informed solutions.

EXPERIENCE

TECH SPECIALIST

Dec '22 — Nov '25

Tech Mahindra(<https://www.techmahindra.com>)

Toronto, Canada (Remote)

- Responsible for leading end-to-end big data platform modernization initiatives, including on-premises Hadoop (HDP) to Cloudera CDP7 migrations and GCP Dataproc upgrades, translating user requirements into technical specifications and comprehensive documentation for compliant delivery.
- Focused on designing secure, scalable, and high-availability data ecosystems through automation, performance tuning, and integration with cloud-native and AI/ML services, leveraging CI/CD pipelines and Azure cloud services to accelerate deployment and ensure compliance.
- Collaborated across engineering, data science, and infrastructure teams to deliver production-ready, enterprise-grade solutions using Python-based tooling for data analysis and NLP-driven user interaction, demonstrating a proven track record of solving complex problems with machine learning.

ASSOCIATE TECHNICAL ARCHITECT

Sep '21 — Sep '22

Tavant(<https://tavant.com>)

India, United States (Remote)

- Responsible for administering and optimizing large-scale, multi-tenant Apache Hadoop clusters supporting critical enterprise workloads, documenting configurations and database models for analytics solutions and integrating with Kubernetes-based services where applicable.
- Focused on enhancing system reliability and performance through load balancing, resource pool optimization, and in-depth cluster load analysis.
- Ensured business continuity by supporting disaster recovery operations and maintaining RPO/RTO objectives.
- Collaborated with cross-functional teams to troubleshoot and fine-tune components across the Hadoop ecosystem, including Kafka, Spark, HBase, and Hive, to deliver high availability and efficient data processing for analytics and ML workloads, while implementing CI/CD practices and containerization using Docker to streamline releases.

SENIOR ANALYST - APPLICATION OPERATIONS

Apr '16 — Sep '21

Allianz Technology SE(<https://tech.allianz.com/en.html>)

India

- Managed and optimized multiple secure CDH5 clusters across TEST, DEV, ANALYTICS, and PROD environments, maintaining 99.9% uptime and high availability.
- Strengthened platform security by implementing Kerberos authentication, Sentry-based authorization, and end-to-end data encryption (at rest and in motion).
- Developed Python-based automation scripts and REST APIs to monitor cluster health, analyze job metrics, and streamline administrative workflows, applying data analysis and NLP techniques to enhance observability and user interaction patterns.
- Designed custom tools for anomaly detection, log analysis, and proactive alerting to reduce downtime, using specifications derived from stakeholder inputs and maintaining clear documentation for supportability and audits.
- Oversaw Cloudera Manager upgrades, Solr Search integration, and BDR pipelines for seamless inter-cluster data replication and backup, incorporating CI/CD automation to standardize changes and ensure compliance across environments.
- Tuned resource pools, managed HDFS quotas and ACLs, and optimized system performance to support large-scale analytics and data processing workloads, documenting operating procedures and user requirements to guide repeatable operations.

IND IT Software Engineer II

May '15 — Apr '16

Aon Hewitt(<https://www.aon.com/en/>)

- Deployed and managed CDH4/CDH5 clusters supporting large-scale production and analytics workloads with high availability and reliability.
- Led disaster recovery planning and implemented automated data backup and cross-data-center replication using Cloudera BDR.
- Built Python-based monitoring tools to analyze cluster logs, detect anomalies, and generate real-time alerts for proactive issue resolution, implementing unit tests and CI/CD hooks to improve reliability and accelerate feedback cycles.
- Designed and maintained resource management frameworks with static and dynamic resource pools to ensure fair scheduling and optimal resource utilization.
- Strengthened platform security through Kerberos authentication and SSL encryption, enabling a fully secured Hadoop environment.
- Collaborated with global teams to provide 24/7 operational support, streamline troubleshooting, and enhance system performance through automation and log-driven insights, maintaining documentation and specifications to support working experience handoffs and audits.

SKILLS

Relevant Skills SQLAlchemy, Azure Cloud Services, Natural Language Processing, CI/CD, PostgreSQL

Data & Architecture Data Pipelines, Integration, Data Architecture

AI & ML LLM Frameworks: LangChain, LlamaIndex, Haystack, DSPy,

Vector Databases: FAISS, Pinecone, Chroma, Weaviate, Milvus,

Agentic AI / LLM Orchestration Frameworks MCP, n8n, NLP, Prompt Engineering Tools: LangSmith, Ollama, Model Serving / Deployment: FastAPI, FastMCP, Streamlit

DevOps & Cloud DEVOPS: Git, Docker, Kubernetes, Jenkins, AgroCD,

AWS Cloud: AWS SageMaker, Bedrock, Observability / AIOps: Prometheus, Grafana, Elastic Stack (ELK),

ETL Apache AirFlow

Databases & Big Data Databases: Mysql Cluster, Neo4j,

Big Data: Hadoop, Spark, Hive, HBase, HDFS, MapReduce, HA Clustering, Hadoop Security, Ranger, Kafka

Tools & Observability observability / AIOps: Prometheus, Grafana, Elastic Stack (ELK), NLP,

programming Languages Python, SQL, Cypher Query Language

Languages English

PROJECTS

RAG-Document-Search [Link](#)

- Link . Built a LangChain + Hugging Face + FAISS RAG pipeline for multi-format documents, improving retrieval accuracy and reducing query latency through optimized embeddings and vector search, while designing API endpoints with FastAPI and implementing CI/CD workflows to streamline deployments on Azure Cloud Services.
- Applied structured data handling, strong programming principles, and soft skills to enhance scalability and coding practices aligned with knowledge engineer standards, translating user requirements into technical specifications and documenting database models and prompt library updates for clearer user interaction.

NeoGraphAI [Link](#)

- Developed NeoGraphAI, a Python-based framework integrating knowledge graphs with generative AI workflows to enable seamless ingestion of structured and unstructured data, graph-centric knowledge representation, and context-aware retrieval for intelligent query interactions, leveraging Natural Language Processing and machine learning to drive accurate data analysis.
- Demonstrated strong soft skills in collaboration and communication throughout development, coordinating with cross-functional engineers to refine specifications and maintain documentation that evidences a proven track record of delivering robust tooling and scalable components.

MCP-InsightEngine - LLM-Based File Analyzer & Insight Generator [Link](#)

- Engineered an LLM-driven file analysis platform leveraging Python, FastAPI, and Streamlit to process CSV, JSON, PDF, and text files, delivering real-time insights such as summaries, key trends, and anomaly detection, and deploying services using Docker containers with CI/CD to Azure Cloud Services for scalable operations.
- Built end-to-end data pipelines and implemented robust integration workflows to support business understanding and data strategy, designing database models with SQLAlchemy backed by PostgreSQL to ensure reliable storage and efficient query performance.
- Applied domain knowledge and proven ability to design scalable data pipeline architecture, ensuring efficient data processing and optimization, and formalized documentation and testing specifications to support maintainability and user requirements.

- Demonstrated strong communication skills, language skills, and soft skills to explain technical implementation to diverse stakeholders, showcasing implementation experience and adherence to best coding practices, while deploying Kubernetes-ready images via Docker and maintaining prompt library assets to enhance user interaction.

- Developed Nutri-GPT, an AI-powered web application integrating OpenAI's Vision and Chat APIs to process food images and automatically generate structured nutrition summaries and calorie insights using Python and Streamlit, while applying soft skills for effective collaboration and user-focused design, and implementing Natural Language Processing techniques for accurate text extraction and prompt library management.
- Engineered a modular AI-driven nutrition analysis platform with Python and Streamlit, leveraging Vision-based image recognition and LLM capabilities to deliver accurate food identification, calorie estimation, and health insights through a scalable architecture, supported by strong soft skills for stakeholder communication, and containerized services using Docker to enable CI/CD and Azure-ready deployments.
- Architected and deployed Nutri-GPT, a computer-vision and LLM-based food analytics tool that transforms images into actionable nutrition insights, demonstrating effective use of OpenAI Vision models, structured data handling, and interactive web app development, complemented by strong soft skills in collaboration and presentation, and documenting specifications for user requirements to ensure compliant, maintainable releases.

Bachelor of Technology in Electronics and Telecommunications in Engineering, Jun '05 — Aug '09
Kerala University (GPA: GPA: 6.9) India

Microsoft Certified Azure Data Fundamentals, Microsoft

Microsoft Certified Azure Fundamentals, Microsoft