Chandrakant Shinde

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Education

Maharashtra Institute of Tech, Pune	May 2014
Bachelor of Computer Science (First Class)	*Pune, Maharashtra*

Experience: 11 Year

MSCI Inc   Dec 2017 – Ongoing
VP of AI Engineering   *Pune, MH*

- **AI Design Lead -** Led the architectural design and end-to-end development of a company-wide, multi-tenant RAG-based knowledge management system deployed on AWS, serving over 15,000 employees across diverse business units. Defined the technical strategy for RAG adoption, influencing executive leadership and securing resources for platform development; established best practices for RAG system design, evaluation Mentored and guided a team of 8 AI/ML engineers and data scientists, fostering expertise in advanced RAG techniques Designed complex, data-intensive business requirements and distributed systems, including the Data Platform for ETL and Report Generation using Python, Spark, Delta, Databricks, K8s.
- **Cloud Migration Specialist -** Successfully migrated the entire ESG infrastructure from on-premises to the Azure cloud, achieving scalability, performance improvements, cost optimization, availability, and enhanced security.
- Software developer

Apex Financial Solutions
Software Engineer   *Bengaluru, Karnataka*

- Developed and maintained multiple services using Ruby on Rails, ensuring high-quality code and adherence to best practices.

Technical Skills

Languages: Python, Ruby
Technologies: LangGraph, LangChain, Milvus, Weaviate, MongoDB, Kubernetes, Azure, Databricks, AIrflow, LangSmith
Concepts: Query Transformation, Routing, Graph Database, GuardRails, Agentic Systems, Human in the loop, Observability, MCP

Projects

Enterprise Secure Knowledge Assistant | *LangChain, LangGraph, LangSmith, Databricks, K8s, GPT-4o, Python, Spark, Delta, Databricks*

- **Challenge:** Provide unified, secure access to vast, fragmented internal knowledge (technical docs, project reports, HR policies, financial data) while preventing leakage of sensitive information and managing high query volume from 15,000+ users.
- **Architected RAG Solution:** Designed a Modular RAG system inspired by SecMulti-RAG principles. The architecture included: (1) An internal knowledge index (Weaviate) with fine-grained access controls based on user roles. (2) A pre-generated "expert knowledge" cache for frequently asked, non-sensitive questions. (3) A secure query filtering mechanism (fine-tuned classification model) to detect sensitive content. (4) Conditional routing: sensitive queries used only internal/expert knowledge with a locally hosted Llama 3 model; non-sensitive queries could optionally leverage external LLMs (GPT-4 via API)
- Retrieval Specificity: Employed hybrid search within the internal Weaviate index and metadata filtering based on document sensitivity tags and user permissions, ensuring retrieved context was both semantically relevant and compliant with access policies.
- **Technologies Used:** Python, LangChain, LangGraph, GuardRails, Weaviate, Llama 3 (local), GPT-4 (API), Kubernetes, Terraform, Langfuse
- **Measurable Outcomes:** Reduced average information retrieval time for employees by 70%; maintained compliance with internal data security policies (zero reported breaches via the assistant); decreased reliance on external support teams by 30%; handled peak loads of 500 queries per minute with sub-5-second average latency.

Multi-Tenant Model Context Protocol (MCP) Hosting Platform | *Azure, Kubernetes, Redis, Outh2 etc*

- **objective:** To develop a scalable cloud platform democratizing access to Model Context Protocol (MCP) tools, enabling users (technical and non-technical) to easily deploy and manage MCP servers for enhanced AI application development and contextual understanding.

- Led the design of a microservices-based, multi-tenant architecture using Docker and Kubernetes, ensuring robust data isolation and efficient resource management for hosting diverse MCP servers.
- Architected a workflow to route data failing AI validation to human review queues, with a feedback loop to continuously improve AI model accuracy.
- Implemented sophisticated data quality and governance processes, Achieved a 75% decrease in data errors
- **Technologies Used:**Cloud Platforms (Azure), Kubernetes, Docker, Microservices, REST APIs, API Gateways, SQL/NoSQL Databases, Message Queues - ASB, Caching - Redis

AI-Powered Data Quality Assurance & Validation Platform | *LangChain, LangGraph, LangSmith, Databricks, K8s, GPT-4o*
- **objective:** Designed an enterprise-grade platform to significantly enhance data integrity within financial data pipelines using AI-driven validation, automated anomaly detection, and intelligent routing for human-in-the-loop review.
- Conceptualized an AI-first approach to data validation, including automated checks for data range, format, consistency, and complex business rules (e.g., YoY change thresholds, inter-field dependencies)
- Architected a workflow to route data failing AI validation to human review queues, with a feedback loop to continuously improve AI model accuracy.
- Implemented sophisticated data quality and governance processes, Achieved a 75% decrease in data errors
- Designed a calculation service which processed TBs of data in minutes to generate ESG ratings resulting 10x faster output

Nextgen ETL System | *Python, Spark, Delta, Databricks, K8s*
- Designed and Developed Efficient Data Pipeline
- Ingested, stored, and processed data from multiple sources, resulting in a remarkable 50% reduction in data processing time
- Ensured data transparency, quality, and accuracy throughout the pipeline
- Implemented sophisticated data quality and governance processes, Achieved a 75% decrease in data errors
- Designed a calculation service which processed TBs of data in minutes to generate ESG ratings resulting 10x faster output

Cloud Migration | *Azure, terraform, Azure DevOps, Monitoring*
- Cloud Migration – Successfully migrated whole ESG infra from onprem to cloud to achieve scalability, performance, cost optimization, availability, and security
- Built a CI/CD pipeline ADO and helm

Event Based System | *K8s, Keda, Service Bus*
- Developed various Event based backend services such as report generation, bulk processing with self healing and monitoring with Keda.
- Patterns used - Choreography, Superwiser pattern