

Sneha Bhalerao

Principal AI Engineer | Agentic AI & Applied AI

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Professional Summary:

Principal AI Engineer with 11+ years of engineering experience spanning AI, data engineering, and enterprise software. Focused on identifying gaps in emerging AI and Agentic AI systems and transforming research-driven concepts into reusable architectures, frameworks, SDKs, and developer platforms.

Skills:

Agentic AI, Multi-Agent Systems, LLMs, RAG, NLP, AI Frameworks & SDKs, AI Evaluation, AI Architecture, LLM Fine-Tuning, Python.

Projects:

Agentic AI Evaluation Framework & Governance-as-a-Service [Adobe]:

AI Systems Architecture | Research | Evaluation

Identified a critical gap in multi-agent AI evaluation; conceptualized and architected a Governance-as-a-Service framework, backed by technical research. Built a centralized logging and evaluation toolkit that generates automated executive and technical assessment reports.

Unified SDK for A2A and MCP protocol based Agentic AI application Development [Adobe]:

AI Platform | Developer Infrastructure

Conceptualized and developed a unified SDK that abstracts both MCP and A2A protocols into a single programming model for Agentic AI application development. The SDK enables developers to create, host, orchestrate, and consume MCP tools and A2A agents within reusable AI workflows through a consistent developer interface.

Framework for Agentic AI application Development [Adobe]:

Agentic AI Architecture

Designed and developed a lightweight, composable framework for building Agentic AI applications with an extensible architecture inspired by modern orchestration frameworks such as Langchain and Langgraph. The framework simplifies agent orchestration, workflow composition, tool integration, and extensibility for enterprise AI applications.

Synthetic Data Generator [Adobe]:

GenAI Infrastructure

Conceptualized and developed an LLM-powered synthetic data generation framework capable of producing up to 1 GB of domain-specific datasets (travel, finance, retail) in under 10 minutes. Combined software engineering principles with LLM-based generation to accelerate dataset creation for AI experimentation and model development.

Finding Writing Tool [Deloitte]:

Applied AI / Business Impact

Designed and developed an AI-powered writing assistant that improves audit documentation by performing grammar correction, tone normalization, readability enhancement, and structured finding generation. Reduced audit review cycles from one week to half a day by enabling junior auditors to produce senior-quality audit findings aligned with organizational standards.

Work Experience:

Lead AI Engineer [AI Engineer I] | Adobe

Jan 2024 – Present, Bengaluru

- Drove architecture and development of reusable Agentic AI frameworks, establishing modular and composable patterns for agent orchestration, workflow composition, and tool integration.

- Led conceptualization of foundational AI infrastructure, including a unified SDK for MCP/A2A interoperability, shared memory architecture for multi-agent systems, and LLM-powered synthetic data generation.
- Defined extensible architectures for enterprise GenAI applications, balancing rapid experimentation with maintainability, reusability, and production readiness.
- Applied LLM fine-tuning and guardrail mechanisms to improve reliability, safety, and production readiness across Generative AI applications.
- Identified and developed reusable AI capabilities to accelerate experimentation and application development, including large-scale domain-specific synthetic data generation.

Sr. ML Engineer - [Deputy Manager] | Deloitte

Apr 2022 - Jan 2024, Bengaluru

- Collaborated with business stakeholders to understand requirements and design AI/ML solutions for enterprise audit automation and intelligent document processing.
- Designed and developed Natural Language Processing (NLP) pipelines for grammar correction, sentence restructuring, readability assessment, text classification, and topic modeling.
- Fine-tuned Large Language Models (LLMs) for grammar correction and audit finding generation, enabling AI-assisted writing aligned with organizational auditing standards.
- Designed and developed an AI-powered audit writing assistant that transformed unstructured audit findings into standardized, high-quality reports, reducing review cycles from one week to half a day.
- Developed an end-to-end prototype integrating AI models with a ReactJS-based user interface and backend services to demonstrate production-ready solution workflows.

Expert ETL Developer - [Development Specialist] | Birlasoft

Feb 2020 - Jan 2021, Pune

- Collaborated with US-based clients to analyze business requirements and design ETL solutions for enterprise data integration.
- Developed and optimized IBM DataStage ETL workflows, performing unit testing, system integration testing, and production deployment.
- Provided end-to-end development support through production rollout, ensuring reliable and maintainable ETL solutions.

Senior ETL Developer - [IT Analyst] | TCS

Sep 2018 - Mar 2019 | Pune

- Enhanced and maintained enterprise ETL solutions by implementing new business requirements and optimizing existing data integration workflows.
- Performed component integration testing (CIT) and provided end-to-end development support through production deployment, ensuring reliable and stable ETL deliveries.

Senior ETL Developer - [Associate Consultant] | Saama Technologies

Oct 2017 - Sep 2018

- Analyzed and optimized enterprise pharmaceutical ETL systems by redesigning data models to eliminate grain inconsistencies and improve data granularity.
- Refactored ETL workflows to support atomic-level data processing, performing unit testing to ensure data integrity and solution reliability.
- Mentored new engineers through technical onboarding and hands-on training while developing domain expertise in pharmaceutical data systems.

ETL Developer - [ETL Developer] | Barclays India

Jul 2013 - Sep 2016

- Collaborated with business stakeholders to analyze requirements and design scalable ETL solutions supporting enterprise data integration initiatives.
 - Developed and maintained Informatica ETL workflows integrating flat files, Oracle, and Teradata data sources, ensuring reliable data processing and production readiness.
 - Improved development efficiency by identifying recurring ETL patterns and implementing reusable automation solutions, reducing manual effort, and improving code maintainability.
 - Mentored junior engineers on Informatica development practices and ETL design, supporting technical onboarding and knowledge sharing.
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AI Research & Personal Projects:

Generic Adaptive RAG Framework:

Personal Research & Prototype

Conceptualized a framework to automatically analyze document collections and recommend retrieval configurations and hyperparameters, simplifying RAG optimization for engineers without specialized NLP expertise.

Hyperparameter Optimization framework:

Personal Research

Conceptualized and experimentally evaluated a novel neural-network training strategy for time constrained hyperparameter optimization across rapid prototyping, research, and production workflows, with initial validation across multiple CNN training scenarios.

Education

PGD - AI and ML [Mar 2021 - Feb 2022] [NIT Warangal] - Grade: 3.75/4

Pro-degree in Data Science [Apr 2019 – Jan 2020] [Imarticus Institute] – Grade: Excellent

Diploma - Java technology [Oct 2012 - Jun 2013] [NIIT Pune] - Grade: Fair

BE - E&TC [Aug 2008 - Jul 2012] [Pune University] - Grade: 63.07%

Awards:

Adobe - **Team Award [Gen AI COE]**

Adobe - **Team Award [Omnis.AI]**

Deloitte - **Move the dot**

Deloitte - **Client Centricity**

Saama Technologies - **Continuous Learning Award**

Saama Technologies - **Star Award**

References Available on Request