

Mahita Panga

Senior Software Engineer – AI Infrastructure | LLM Systems |
Distributed Backend | Multi-Agent Platforms

Texas, USA | Open to Relocation

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PROFESSIONAL SUMMARY

Senior Software Engineer with 8+ years of experience designing distributed systems, AI infrastructure, and production-scale backend platforms. Experienced building autonomous LLM-powered systems including multi-agent workflows, Retrieval-Augmented Generation (RAG) pipelines, AI debugging agents, and event-driven microservices. Strong background in Python, distributed systems, cloud-native architectures, and production AI engineering with emphasis on reliability, observability, context management, and scalable automation.

CORE EXPERTISE

Multi-Agent Systems, RAG Pipelines, AI Orchestration, Distributed Systems, Event-Driven Architecture, Async Backend Systems, AI Platform Engineering, Cloud-Native Infrastructure, LLM Tool Use, Autonomous Agents

TECHNICAL SKILLS

AI Engineering: Large Language Models (OpenAI, Claude), Retrieval-Augmented Generation (RAG), Multi-Agent Systems, Prompt Engineering, Context Management, Tool Calling / Function Calling, Agent Memory, Hallucination Mitigation, AI Evaluation Frameworks, MCP, LangGraph, LangChain, CrewAI

Vector Search: FAISS, pgvector, Pinecone, Weaviate, Milvus, Hybrid Search, Embedding Models, Reranking

Backend: Async Python, FastAPI, REST, gRPC, Kafka, Redis, PostgreSQL

Observability: OpenTelemetry, Prometheus, Grafana, Structured Logging, Distributed Tracing

AI Developer Tooling: Cursor, GitHub Copilot, Claude Code, ChatGPT, Windsurf

Databases: PostgreSQL, BigQuery, MongoDB, Elasticsearch

PROFESSIONAL EXPERIENCE

Senior Software Engineer, **AGODA** - Bangkok, Thailand

Jul 2025 - Mar 2026

- Architected and engineered **low-latency, fault-tolerant payment microservices** for Agoda Wallet, leveraging a **Kafka-based event-driven architecture** and **idempotent APIs** to support high-volume transactions, resulting in a **20% reduction in processing latency** and near **99.9% availability**
- Built automated integration, resilience, and chaos testing frameworks to validate fault tolerance under production-scale workloads achieving more than **95% test coverage**.

- Optimized CI/CD pipeline reliability, resulting in a **30% improvement** in deployment efficiency.
- Built resilient event-driven microservices supporting unattended production environments.
- Designed idempotent APIs with retry, audit logging, crash recovery, and state management.
- Implemented asynchronous processing for high-throughput distributed systems.

Senior Software Engineer, WALMART GLOBAL TECH - Bengaluru, India Feb 2021 - Jun 2025

- Designed semantic retrieval pipelines using embedding models and vector similarity search for enterprise document retrieval. Built scalable search pipelines supporting hybrid retrieval and semantic ranking. Developed reusable AI services exposing embedding generation and retrieval APIs.
- Built a multi-tenant Fast-API based **PII redaction service** using SpaCy and Presidio to ensure enterprise-level data privacy compliance.
- Led a team of five engineers in designing, developing, and maintaining enterprise NLP applications.
- Engineered a reusable data quality validation framework with Great Expectations, enabling multiple teams to enforce data standards and maintain robust pipeline reliability.
- Scaled CI/CD test coverage from **50% to 95%**, significantly enhancing production release confidence and system stability.

Associate Data Engineer, ADOBE - Bengaluru, India Nov 2017 - Jan 2021

- Architected **large-scale data pipelines** for Adobe Analytics using Spark, Hadoop, and Airflow, significantly improving data availability and reliability for enterprise reporting and downstream analytics.
- Developed **Spark-based ETL** pipelines processing terabytes of Adobe Analytics data for enterprise customers.
- Designed and optimized scalable **ETL workflows**, streamlining data processing to enhance report generation speed and data accuracy for major enterprise customers.

Product Engineer Trainee, INSZoom - Bengaluru, India Aug 2017 - Oct 2017

- Developed backend service modules using **ASP.NET and C#**

KEY PROJECTS

BugBot: AI-Driven Automated Pipeline Debugging Agent

- Designed an autonomous multi-agent framework for pipeline debugging, where specialized LLM agents collaborated to perform log analysis, root-cause analysis, SQL validation, code repair, and remediation planning.
- Built Retrieval-Augmented Generation (RAG) pipelines to ground agent responses using historical incident reports, documentation, runbooks, and previous debugging sessions. Implemented tool-calling workflows allowing agents to execute SQL validation, Python diagnostics, Bash scripts, and metadata inspection.
- Engineered context management and conversation memory to improve long-running debugging sessions.
- Designed evaluation pipelines measuring hallucination rate, retrieval quality, and debugging accuracy.

- Built asynchronous orchestration services using FastAPI and Kafka. Added audit logging and observability for autonomous agent execution.

AI-Powered Real-Time Stock Market Monitoring

- Built an **AI-enhanced real-time analytics system** for market monitoring, leveraging streaming data pipelines to detect volatility patterns and trigger automated WhatsApp alerts via Twilio.
- Designed a **scalable, event-driven data pipeline** for high-frequency ingestion, enabling low-latency processing and asynchronous notification delivery.
- Developed **hybrid AI pipelines** combining rule-based logic, statistical models, and anomaly detection for market signal generation.
- Applied **time-series analysis and anomaly detection techniques** to improve signal accuracy and reduce false positives in alerting.

ACHIEVEMENTS

- **Hackathons:** 1st Place (Airbus Aerothon 6.0, 2024), 2nd Place (Databricks GenAI World Cup, 2024), 2nd Place (CareerNet Big Data Hackathon, 2023), 1st Place (Barclays All India Women Hackathon, 2019)
- **Professional Recognition:** Associate of the Month, Team of the Quarter, Bravo Award (Walmart); Delight Driven Consultant (Adobe)

EDUCATION

M.Tech, Masters in Data Science | Birla Institute of Technology and Science (BITS), Pilani, India **GPA:** 8.25 / 10

B.E., Computer Science and Engineering | Jawaharlal Nehru Technological University (JNTU), Kakinada, India **GPA:** 9.41 / 10