SUNIL SAROLKAR (AI & Finance)

Principal Solution Architect (AI & GenAI Toolchain) • GenAI & Financial Services / Insurance

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16+ years in BFSI — *Capital Markets & Derivatives (CDS/IRS, Dodd-Frank) · Regulatory Reporting · Corporate Cashflow · Credit Bureau / Microfinance · Middle & Back-Office Banking — at **Deutsche Bank**, **Credit Suisse** via Cognizant & **HSBC**.*

AI architecture leader with 16+ years designing and deploying enterprise-scale solutions for **Financial Services**. Deep BFSI domain expertise across **capital markets, derivatives and regulatory reporting**, paired with proven strength architecting **GenAI** and **agentic systems (LangGraph, LangChain, Vertex AI)** that bridge cutting-edge AI with legacy banking data. Trusted technical authority in **customer-facing and executive-advisory roles**, translating complex business requirements into secure, scalable, cloud-native architectures.

CORE COMPETENCIES

BFSI Domain Expertise: **Capital Markets & Derivatives** (**CDS, IRS, FIXML**) · **Dodd-Frank & Regulatory Reporting** · **Corporate Cashflow** · **Credit Bureau / Microfinance** · Middle & Back-Office Operations · **Financial Data Warehousing**

Customer Engineering & Advisory: Technical Discovery · Architectural Scoping · Rapid Prototyping & PoC Delivery · Executive Presales · Value-Realization Mapping · Cross-Functional Stakeholder Alignment

Agentic AI & Search Engineering: **LangGraph** · **LangChain** · **Vertex AI** · Production **RAG** Pipelines · Text-to-SQL · Semantic & Hybrid Retrieval · Evaluation (**LLM-as-a-judge**)

Enterprise Integration & API Governance: Model Context Protocol (**MCP**) · OpenAPI · API Gateways · ESB · Event-Driven Architectures · Distributed Systems

Data Engineering & Pipelines: Kafka · Spark · Airflow · BigQuery · Dataflow · Streaming & Batch Processing

Security, Observability & Cloud: OAuth2 · Short-Lived Credential Management · Distributed Tracing · Audit Logging · Blast-Radius Containment · Cloud-Native Design (GCP, AWS)

PROFESSIONAL EXPERIENCE

Principal Solution Architect, Customer Facing | US Insurance Client via Zensar Technologies, Pune **|** *June 2026 – Present*

- **Agent-Assist Next Best Offer Engine (Insurance):** Architected a recommendation engine combining a Neo4j persona knowledge graph with lifetime-value, likelihood-to-act and product-fit models — served from AKS via Helm with Azure Blob-backed model artifacts.
- **Legacy Modernization — COBOL/Tandem to .NET on Azure:** Leading discovery and phased migration strategy for a mainframe-to-cloud program — AST-driven transformation pipeline, spec-driven development with AI coding agents, and golden-master validation to guarantee functional equivalence.

Assistant Vice President, Engineering Lead | Deutsche Bank, Pune *Jul 2015 – May 2026*

- **Executive Advisory & Technical Presales (BFSI):** Primary AI technical architect for global BFSI business lines — led design workshops and presented GenAI ROI and architecture strategy directly to executive leadership.
- **Prioritization Rubrics across Business Units:** Built and executed a standardized evaluation rubric to prioritize architecture requirements across multiple business units in parallel, matching recommendations to each unit's engineering maturity and business velocity.
- **Enterprise-Scale RAG — DB Omni:** Implemented an organisation-wide RAG pipeline integrating GitHub, Bitbucket and Confluence into a single unified search; enabled code explainability with business context and surfaced knowledge gaps — **Materially reduced information-search time.**
- **Agentic QA & Reconciliation Automation:** Architected an enterprise multi-agent system (LangGraph, LangChain) automating end-to-end test execution and post-trade data reconciliation across banking platforms — **QA testing cycles reduced by ~60%.**
- **Corporate Cashflow Analytics — Deterministic ML at Scale:** Implemented agentic workflow using deterministic tool calls and a custom-trained model with confidence scoring; low-confidence cases route to human review, feeding continuous retraining. Processes 10B+ monthly records — **~70% reduction in compliance rule-change effort, ~30% performance improvement.**

- **Regulatory Data-Adjustment Automation:** Automated manual data adjustments in the back-office regulatory reporting warehouse (event-driven architecture on GCP — BigQuery, Dataflow — and AWS), **reducing Functional Analyst adjustment effort by ~70%.**
- **Enterprise LLMOps:** Established distributed tracing and audit logging so every automated financial decision is traceable; designed functional evaluation metrics for real-time model and agent quality.

Software Engineer | Credit Suisse via Cognizant Technology Solutions *Dec 2013 – Jul 2015*

- **Back-Office Position Management (Capital Markets):** Built core backend for an enterprise transactional Data Warehouse managing real-time account-position changes across global securities infrastructures; used ESB to handle high-frequency capital-markets data.

Software Engineer | HSBC Software Development India *Aug 2011 – Dec 2013*

- **Dodd-Frank Compliance & Derivatives Processing:** Engineered middle-office integration platforms handling **FIXML** APIs for **DTCC** and **MarkitWire** to process **Credit Default Swaps** (CDS) and **Interest Rate Swaps** (IRS) trade data for **Dodd-Frank** regulatory reporting.
- **Trading Platform Integrations:** Built secure, low-latency "Smart Client Frameworks" to route real-time transaction data from **Bloomberg front-office terminals** downstream into **Global Calypso back-office systems** for post-trade clearing and settlement.

Software Engineer | High Mark Credit Information Services (now CRIF High Mark) *Mar 2010 – Aug 2011*

- **Credit Bureau Bulk Ingestion (Consumer Credit / Fintech):** Designed high-volume, **secure ETL pipelines ingesting bulk financial data** from **Micro-Finance Institutions**; automated cleansing and transformation into regulator-mandated formats for credit-bureau reporting.

KEY PROJECTS · FINANCIAL SERVICES

Trade Data Insights Pipeline — *Corporate Cashflow, Deutsche Bank (enterprise multi-agent workflow)*

- Led technical **discovery and scoping** to ingest and process unstructured corporate cashflow telemetry; translated vague business requests into a concrete multi-agent architecture (LangChain) reasoning over complex financial data. **~70% reduction in compliance rule-change effort, ~30% performance improvement.**
- Applied **Model Context Protocol** (**MCP**) principles for safe agent-to-database interaction, with evaluation guardrails ensuring deterministic outputs for compliance review.

Structformer — Regulatory Data Text-to-SQL Engine — *Deutsche Bank regulatory reporting*

- Designed a custom **Transformer engine (SentencePiece tokenizer)** automating data adjustments for financial regulatory reports. **~70% time saved in data adjustment.** [Source code available on Github – https://github.com/spsarolkar/StructFormer]
- Built automated **Text-to-SQL workflows** letting non-technical compliance stakeholders query complex data lakes securely; validated against deterministic financial-accuracy metrics (99%).

AI-Driven Indian Sign Language Translation — *IISc Capstone (live demo -* https://huggingface.co/spaces/sunilsarolkar/ISL-SignLanguageTranslation)

- Real-time, low-latency multimodal ML pipeline for continuous streaming under strict edge constraints; custom temporal recognition (**OpenPose + Transformer/LSTM**) delivering high-speed inference without heavy cloud compute.

EDUCATION & CERTIFICATIONS

- **PG Certification, Computational Data Science — IISc Bangalore (2024):** Grade A+ (94%; 100% in Scalable Computing & 90% in ML). Top Talent Pass (TTPS) Eligible.
- **Google Cloud:** Professional Machine Learning Engineer (2025) · Associate Cloud Engineer (2023).
- **Diploma in Advanced Computing:** C-DAC / ACTS, Pune (2007).
- **B.E. Electronics:** Pune University, VIT College (2006).