Sagar Singh

Software Development Engineer II @ Bank of New York | Integrated B.Tech + M.Tech, IIT Kharagpur

Email: sagarjethi9@gmail.com | Phone: +91 9720310412 | LinkedIn: linkedin.com/in/sagarjethi9

Education

- **Indian Institute of Technology, Kharagpur, West Bengal** Aug 2018 – Apr 2023
  Integrated Bachelor and Master of Technology in **Industrial and Systems Engineering** **CGPA: 7.7 / 10.00**

Work Experience

Software Development Engineer II - Bank of New York – Chennai, India January 2025 – Present

Retail Client Onboarding : *Spring Boot, Oracle, Hazelcast, REST APIs, Python, Data Modeling, System Design*

- Designed a multi-layered Oracle schema using a master-customization separation pattern, enabling 1,000+ broker-dealer firms to independently configure account-type references and reducing support tickets and client onboarding time.
- Optimized configuration retrieval by designing Oracle PL/SQL packages and procedures that consolidated account, section, and field lookups from N+1 database calls into a single call, reducing database round trips and improving API response latency.
- Developed key components of a Spring Boot microservice exposing 40+ REST APIs, with read/write DB routing across 4 connection pools and Hazelcast caching, cutting query latency from 800ms to 120ms (85%) at 50K+ daily requests.
- Created an MCP server (Python) enabling AI agents to execute configuration changes, reducing manual configuration effort by 90% for complex configuration changes, bridging enterprise financial configuration management with LLM-based tooling.
- Executed a large-scale data migration pipeline transitioning configurations for 1,000+ broker-dealer firms/offices from legacy system to new master-customization model with zero data loss, achieving 100% data integrity validation across 2M+ records.

Full Stack Developer - Bank of New York – Chennai, India July 2023 – January 2025

Retail Client Onboarding : *Spring Boot, Oracle, REST APIs*

- Built PL/SQL batch pipelines and a change-driven data synchronization system using materialized views to propagate configuration data across multi-tenant profile hierarchies, processing 10K+ row batches with 100% accuracy and reducing synchronization time from 24 hours (batch job) to 4 seconds, ensuring data consistency for 1000+ firms and 200+ account types.
- Implemented high-performance concurrent processing pipelines using Java Virtual Threads and custom Thread Pool Task Executor framework with a recursive configuration merge engine, reducing configuration assembly latency by 70%.
- Developed a 120+ class polymorphic domain model and rule-driven validation engine for client onboarding configurations handling 600+ validation rules for fields, accelerating validation processing per field value during account opening.

Software Engineer Intern - Persistent Systems – Pune, India May 2022 – July 2022

- Built an Azure DevOps CI/CD pipeline with SAST, SCA and DAST scans (SonarQube, OWASP ZAP) plus Terraform.

Software Engineer Intern - Secure Blink – Remote, India May 2021 – July 2021

- Independently created the ThreatSpy vulnerability reporting dashboard UI from scratch, developing 25+ interactive charts and visualization screens using Vue.js, Vuex, and Apache ECharts to surface real-time application vulnerabilities in web apps.

Projects

Sara: Bilingual Chat and Voice Companion for Small-Business Owners in India *Python, FastAPI, SQLite, React, TypeScript*

- Built a bilingual (English, Hindi, Hinglish) chat and live voice companion for small-business owners in India: one agent, one memory, interruptible streaming voice, Sara-initiated reminders and ten tools, backed by about 1,300 server tests.
- Designed a typed memory system: working, episodic, semantic, reminders, and style notes. Background extractor and summariser jobs fill it without blocking replies, and "forget" hard-deletes a fact and masks its source messages.
- Built the agent loop and tool layer: a per-user actor with a bounded tool-calling loop (3 rounds, 4 calls per turn), ten tools (EMI calculator, finance fact and passage lookup, remember/forget, reminders, language/style preferences), changes committed atomically with the reply, and a guard chain (figures, deflection, identifiers, unsaved claims) with one rewrite or a safe fallback.

Skills

Technical Skills: Python, Java, C++, HTML, CSS, JavaScript, Spring Boot, Oracle SQL, MySQL, Data Modeling, System Design, Angular, Vue, Hazelcast, Kafka, Redis, Docker, Git, Agile, CI/CD, MCP, FastMCP, FastAPI, LangChain, LangGraph

Awards and Achievements

- Secured **99.66 percentile** in JEE Advanced 2018 out of over 1.5 million candidates across the nation.
- Won Gold at Inter IIT Film Making competition with a team of 15 members in 2019 and 2022.