SUDIPTA BANIK

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SUMMARY

Senior Software Engineer (Backend) with 6.5+ years of experience designing, architecting, and operating high-scale distributed systems in Go and Java for global platforms including Uber, Grab, and FourKites. At Uber, I led strategic initiatives in cluster fault isolation and system reliability, directly enhancing operational resilience, reducing incident recovery times to under a minute, and improving scheduling logic. During my tenure at Grab, I engineered pan-Southeast Asian financial lending systems processing millions of transactions, optimizing API performance while upholding TDD and clean code standards. My work at FourKites involved taking full ownership of B2B shipment tracking challenges and architecting scalable data pipelines that mitigated single-provider dependencies and significantly reduced operational costs. Proficient in Docker, Linux, Kubernetes, Kafka, MySQL, and Redis, I bring extensive experience collaborating across international, distributed teams to deliver and maintain business-critical infrastructure at scale.

WORK EXPERIENCE

UBER

Software Engineer (L4) Oct 2024 – Present
Batch Compute Team Bangalore, India

- **Automated cluster fault isolation:** Implemented circuit breakers and retries on the Apache YARN Router using Resilience4j, isolating failing clusters, reducing incident MTTR to under 60 seconds, and lowering the risk of widespread service disruptions.
- **Kubernetes admission controls:** Built a ConfigMap-driven admission policy to block low-tier apps during outages, protecting capacity for high-priority workloads (blocked $\approx 7\%$ of total concurrent volume).
- **Apache YARN scheduling stability:** Improved by removing cluster-dependent application ID generation, centralising ID creation in the Router, and enforcing submission-time ordering, reducing out-of-order allocation delays by ≈ 20 seconds in small clusters.
- **Cluster federation incident control:** Addressed slow and risky recovery from failing sub-clusters by building a YARN Router federation CLI with ZooKeeper-backed runtime state, enabling rapid detachment, blocking unhealthy RPCs, and containing incident blast radius.
- **Mitigated host instability:** Analyzed and optimized YARN host memory requirements, effectively preventing Out of Memory (OOM) errors and enhancing the stability of the Apache YARN cluster during high-memory workloads.
- **Improved K8s operational visibility:** Enhanced Uber's Kubernetes batch job dashboard with job-id search and resource-usage visualization, reducing incident triage time.

GRAB

Senior Software Engineer (Fintech) Aug 2023 – Oct 2024
Lending Core Team Bangalore, India

- Contributed to redesigning the loan eligibility processing engine from a monthly batch process to an **event-driven system triggered by real-time driver activity**. This **eliminated data lag** and **redistributed the database processing load for millions of drivers by $\approx 30\%$, increasing loan product adoption**.
- Optimized loan creation API performance by implementing **MySQL batch inserts** for instalment processing, **reducing p95 latency by almost 32%**. The reduction in network round-trips and lock acquisitions **improved throughput during high-concurrency database writes**.
- Developed a new **scalable data aggregator** consuming 5+ internal APIs to facilitate banking partnerships; optimized for **sub-second latency** and implemented **partial response logic** to ensure **high system availability**.
- Enhanced the Go Kafka message retry framework by enabling message re-queuing for reprocessing during application shutdowns, reducing message loss incidents to near zero and improving system reliability.
- Mentored 2 new hires, accelerating onboarding and reducing ramp-up time.

Software Engineer Oct 2021 – Aug 2023
PayLater Team Bangalore, India

- Faced with the need to support Grab's expansion into Indonesia, designed and scaled the **BNPL Refund API** to handle 10% of the country's user base at launch. Introduced **idempotent design and state machine logic**, automating error recovery and complex refund flows, which improved reliability and user satisfaction.
- Developed a **tiered service fee engine** for the Indonesia BNPL rollout. Orchestrated changes across **real-time Charge APIs and batch billing systems to calculate usage-based fees** according to the country's regulatory requirements. Integrated **slab-rate logic** and ensured fee charges during initial monthly transaction.
- Designed and delivered a configurable credit risk checker module, collaborating with product management and external credit bureaus to integrate country-specific requirements and ensure regulatory compliance.
- Designed and implemented a **robust lending credit score API**, integrating data from multiple internal services. Drove discussions with internal data-science team and product teams, ensuring **adherence to API design and security best practices**.
- Collaborated in cross-service **technical debt reduction**, including a Go version migration and **full go mod adoption**. Improved **build pipeline speeds by 18%** and **reduced container image sizes**. Executed a comprehensive refactor that **increased unit test coverage by 20%** and ensured strict **clean-code adherence**.
- Recognized with **"The Grab Way Award" in 2023** for leading engineering improvements in the BNPL project, which enhanced system reliability and supported business growth.

FOURKITES INC.

Software Engineer Jun 2019 – Oct 2021
Multimodal Supply Chain Visibility Team Chennai, India

- **Architected and implemented a scalable API response caching system** using Redis to enable direct integration with 8+ global maritime carriers, reducing reliance on costly third party data providers. Designed carrier specific caching to comply with API rate limits, and built end-to-end data collection and update flows to ensure timely and cost effective shipment tracking.
- Resolved search disruptions by replacing a shared Elasticsearch dependency with a specialized Port Autocomplete API; utilized **composite indexing and in-memory caching** for 80,000+ ports to achieve **sub-100 ms latency and operational independence**.
- **Designed an asynchronous Kafka-based pipeline** to enrich maritime ETD events by **integrating distributed microservices into a unified callback payload**, decoupling ingestion from enrichment to ensure **high-throughput delivery of real-time shipment updates**.
- Identified inefficiencies in QA testing and led the development of an internal tool for creating shipment tracking events, mentoring an intern in the process. This reduced tracking event testing time significantly and improved QA productivity.
- **Integrated ocean specific features into common shipment cloning module** to streamline new client demonstrations. This enhancement enabled tailored, **domain specific data replication**, improving the **accuracy and impact of the sales demos**.

EDUCATION

Jadavpur University Aug 2015 – May 2019
Bachelor of Engineering in Electrical Engineering Kolkata, India
Relevant Coursework: C++, Data Structures & Algorithms, Computer Networks, Signals & Systems, Engineering Mathematics

TECHNICAL SKILLS

- **Languages:** Go, Java, SQL, Python, C++
- **Distributed Systems & Infrastructure:** Kubernetes (K8s), Apache YARN, Docker, AWS, GCP
- **Data Management & Streaming:** Kafka, Redis, Aerospike, PostgreSQL, MySQL
- **Frameworks & Tools:** Spring Boot, Datadog, Jenkins, Git

LANGUAGES

English: Full Professional Proficiency **Bengali:** Native