SUDIPTA BANIK

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SUMMARY

Software Engineer (Backend) with 6+ years of experience building and optimising distributed systems in Go and Java at Uber, Grab, and FourKites. At Uber, I hardened Apache YARN and Kubernetes reliability by implementing automated cluster fault isolation and a YARN CLI that slashed incident MTTR from 15+ minutes to under 60 seconds. At Grab, I delivered the Indonesia BNPL launch for millions of users by architecting idempotent refund APIs and tiered fee modules, while re-engineering loan eligibility into a real-time event-driven system that reduced peak DB demand by 30

WORK EXPERIENCE

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

- **Automated cluster fault isolation:** Implemented a Resilience4j layer on the Apache YARN Router with per-cluster circuit breakers and retries, reducing manual incident MTTR from around 15 minutes to under 60 seconds.
- **Kubernetes admission controls:** Built a ConfigMap-driven admission policy to block low-tier apps during outages, protecting capacity for high-priority workloads (blocked around 7% of total concurrent volume).
- **Apache YARN scheduling improvements:** Moved application-id generation to the YARN Router and enforced submission time based ordering, reducing scheduling out-of-order delays by almost 20s in smaller clusters.
- **Cluster federation management CLI:** Built an Apache YARN router federation CLI command with Zookeeper-backed runtime state to instantly detach problematic sub-clusters, stop RPCs to unhealthy clusters, and contain 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   Aug 2023 – Oct 2024
Lending Core Team   Bangalore, India

- Contributed to redesigning the loan eligibility processing engine from a bi-weekly batch process to an **event-driven system triggered by real-time driver activity.** This **eliminated data lag** and **redistributed the processing load for millions of drivers across five international markets, reducing peak database demand by approximately 30% and 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 **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 | Multimodal Supply Chain Visibility Team

Jun 2019 – Oct 2021
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 80k ports to achieve **sub-100ms 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
Bachelor of Engineering in Electrical Engineering

Aug 2015 – May 2019
Kolkata, India

Relevant Coursework: C++, Data Structures & Algorithms, Computer Networks, Signals & Systems, Engineering Mathematics

TECHNICAL SKILLS

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

LANGUAGES

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