Mrudhul G

Skills

Languages & Databases: Golang, Java, Python, React, TypeScript, Bash, PostgreSQL, Elasticsearch, MongoDB, Redis.
Frameworks & Cloud: Spring Boot, Flink, Airflow, AWS (S3, Athena, Glue, Lambda, EC2, MSKConnect, SNS, SQS, EKS).
Technologies & Tools: Kafka, Docker, Kubernetes, Terraform, Git, Superset, Grafana, Linux, Jenkins, CI/CD.
Architecture & Design: Microservices, Event-driven , DDD, TDD, Distributed & Scalable Systems, SOLID, RESTful APIs.

Experience

Senior Software Engineer — Brane Group   April 2023 - present
- Led a team of **12** to build a no-code, multi-configurable site builder (React/TypeScript frontend, **Go** backend, REST APIs, **Elasticsearch**, **MongoDB**), adopted by **100+** clients, replaced Jira with an in-house PMS.
- Leveraged **Elasticsearch** to search across **400M+** records with **80-180ms** latency, tenant-specific, multi-tenant marketplace, multi-language, user rights configurations via **Go** RESTful APIs and **MongoDB**.
- Engineered **Kafka**-based parallel **OLTP/ETL** pipelines for GlobalSearch using **Flink**, **Elasticsearch**, **PostgreSQL**, **Redis**, attained under **14ms** latency, **200k+ RPM** throughput, and **0%** lag.
- Architected **ETL/OLAP** pipelines for click-through and tag analytics using **Kafka (Avro)**, **Flink**, **S3 (Parquet)**, **Athena**, **Glue**, and **Lambda**, delivered **200k RPM** throughput with **500ms** latency, integrated **Superset** for visualizations.
- Migrated search infra from **OpenSearch** to **Elasticsearch** on **EC2**, optimizing heap, storage, nodes, shards, ILM, cutting AWS Search infra costs by **92%** while maintaining **stability** and **0** production issues.
- Streamlined data traversal and cleanup, segregation for MDM data, added **ILM** for **OpenSearch**, **LCM** for **S3**, cutting AWS S3 costs by **65%** and OpenSearch costs by **10%**.
- Mentored **5** engineers and orchestrated **Java** monolithic to microservices transition on **AWS EKS**.
- Conducted KTs, led client, QA, & cross-functional team meetings, UX/UI discussions, and oversaw code reviews, bug fixes, and repository management.

Software Engineer — Brane Group   April 2021 - March 2023
- Designed and Developed in-house dashboard builder, integrated **Superset**, featuring multi-format exports, scheduled reports, and notifications via RESTful APIs, elevated user experience and functionality, serving **100+** clients.
- Scaled **Kafka** and **Flink** based **OLTP** pipeline, boosting throughput from **3k** to **60k RPM** with **200ms** latency and **0** data loss by optimizing with parallelism, **RocksDB** checkpointing, schema/mapping, and batching.
- Enhanced **EQL** an in-house query language, with complex arithmetic, pagination, and optimizing transitions between **Athena** and **OpenSearch**, **JOOQ** and caching, trimmed latency by **30%**.
- Increased code coverage from **30%** to **96%** through **JUnit** and integration tests, eliminated **SonarQube** issues.
- Collaborated on Kafka-based notification system with **SNS** and **Airflow** to enable scheduled email and SMS.

Android Developer — Prajjawala   August 2018 - June 2020
- Developed **2** Android apps using **Java** and **Android Framework**, handling the full development lifecycle.

Projects

VortexNetFS - A Decentralized Distributed File Storage | *Golang, DFS, gRPC, REST*   [Github]
- Built a highly **scalable**, **decentralized** file storage system from the ground up, featuring custom **TCP** communication, **consistent hashing**, file chunking, **DHT** lookups, replication, rebalancing, heartbeats, and **WAL** with **fault tolerance**.

GenAI - Probing GPT-2 Layers in Relationship Analysis | *PyTorch, Transformers, Pandas*   [Github]
- Probed **GPT-2** with **Baukit**, analyzing MLP and attention layers with **SNLI** corpus, trained classifiers on hidden states for identifying entailment, contradiction, and neutral relationships, revealing **incremental** learning across layers.

Algorithm - Scintillation Removal and Target Detection | *C++, Python, Matlab, ALM*   [IEEE]
- Created novel algorithm derived from modified **RPCA**, **RGLRAM** for Scintillation removal, Hessian target detection in military tank systems up to **2 km** in **100ms** for **PXE**, **DRDO** and published extended algorithm at **ICORT**.

Education & Scholastic Achievements

Indian Institute of Technology Bhubaneswar, Bachelor of Technology   July 2017 - June 2021
- *Student Excellence Award*, IIT Bhubaneswar, FY 2020
- *All India runner-up **Smart India Hackathon**, FY 2019*