Modita Rana

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EDUCATION

M.Tech, Cloud Computing

Indian Institute of Technology,Patna — *Aug. 2024 – Present*

B.Tech, Information Technology

J.C. Bose University of Science and Technology — *Aug. 2017 – June 2021*

EXPERIENCE

Software Engineer II — Oct. 2024 – Present

Akamai Technologies — *Bengaluru, KA*

Revamped and architected the second version of the Metric Read API, adding multi-metric query capabilities, dynamic filters, and performance improvements while ensuring full backward compatibility.

- Co-developed the custom OpenTelemetry receiver (CloudPulse) as part of a two-member core team, contributing to key components like resource ID fetchers, JWT token generation, and region-aware batching logic. Designed and executed end-to-end automation tests, gaining deep functional insights into the receiver's data flow, caching, and ingestion pipeline.
- Proactively monitored **Grafana dashboards** to identify system bottlenecks, leading performance tuning efforts and enhancing observability across distributed workloads.
- Collaborated cross-functionally to integrate metric processing improvements into the analytics pipeline, improving modularity, validation, and operational resilience.
- Optimized **containerized workloads** on Kubernetes and Armada clusters, improving infrastructure efficiency through profiling and resource tuning.
- Strengthened system robustness with enhanced **error handling**, structured validation logic, and comprehensive automated test coverage for production-grade reliability.

Software development Engineer — Feb. 2023 – June 2024

Saras Analytics — *Hyderabad, TS*

- Contributed to the development and maintenance of a software system with multiple microservices using **Kotlin**, and **PostgreSQL**, resulting in a 20% increase in user satisfaction. Provided prompt and efficient solutions to customer-reported bugs, helping to troubleshoot and resolve them.
- Added new features for resource monitoring, such as **Prometheus Micrometer**, using **Python** for enhanced system tracking and analysis.
- Developed Python scripts for **automation**, reducing manual intervention in repetitive tasks and improving overall operational efficiency.
- Created a Python script to efficiently run the local setup for all microservices, **Kafka** and **Zookeeper**, streamlining the development environment and reducing setup time for the team.

Backend Engineer — May 2019 – July 2019

Innowatts Energy — *Gurugram, HR*

- Designed and implemented **AI-driven electricity load** forecasting pipelines using **AWS S3**, **AWS EMR**, and **SQL** for data processing, transformations, and validations.
- Leveraged **Kafka** for real-time data streaming and seamless data flow across distributed systems.
- Managed optimising **AWS** infrastructure for **cost efficiency** and **performance**.

PROJECTS

OpenTelemetry Receiver Development | *Go, OpenTelemetry, Bash, Docker* — April 2025 – Present

To contribute to an in-house OpenTelemetry receiver within the collector architecture for scalable metric ingestion, including features like a dynamic resource ID fetcher and JWT-based authentication.

Multi-Metric Query Upgrade for Internal Metrics API | *PromQL , API Development, Flask* — Nov 2024 – Feb 2025

To upgrade the existing internal Metrics Read API by introducing multi-metric query capability, advanced split-by filters based on entity and node types, and enhanced performance handling—while ensuring backward compatibility, better error management, and improved observability.

TECHNICAL SKILLS

Languages: Python, Java, HTML, CSS, JavaScript
Frameworks: Flask, Django, Spring Boot, FastAPI
Tools & Platforms: Kubernetes, Docker, GitHub, GitLab, CI/CD, Prometheus, Grafana
Cloud: AWS, Google Cloud
Databases: MySQL, PostgreSQL, MongoDB