PIYUSH JAGADISH BAG

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Currently on H1B, Looking for Software Engineer L4 opportunity from July 2024 with PERM sponsorship

EXPERIENCE

Arista Networks   Santa Clara, CA

Software Engineer, Developer Experience and Productivity   Mar 2022 - June 2022, Sep 2022 - Dec 2022 (Intern), Jan 2023 - Present

- Architected and implemented a robust event-driven architecture to handle over 100,000 events per second, ensuring low-latency requirements through effective use of Kafka for message streaming and gRPC with Protocol Buffers for efficient serialization.
- Automated the provisioning and management of cloud infrastructure using Terraform, enabling reproducible and scalable environments. Deployed a multi-cluster Kubernetes setup, achieving 99.99% uptime, and ensuring robust infrastructure management.
- Integrated comprehensive monitoring and observability solutions using Prometheus and OpenTelemetry, facilitating real-time metrics collection, distributed tracing, and logging, reducing incident response time by 40%.
- Leveraged Command and Query Responsibility Segregation (CQRS) and Event Sourcing patterns to ensure eventual consistency and seamless scalability across distributed services

Apple   Sunnyvale, CA

Software Engineer Intern, Summer 2022   Jun 2022 - Sept 2022

- Replaced built-in Query Parser ANTLR with custom Query-Support developed using Go and MongoDB Aggregation Pipeline and MongoDB Query Language, enhanced performance of Search API in Data Access Layer by 30%
- The allowed front end team to search DB using custom-built structs and unifying within an interface in order to leverage MongoDB query operators in JSON format. Wrote unit tests for 30+ use cases, bringing test coverage to 100%.
- Improved the performance of a legacy backend system by refactoring and optimizing code in Go, resulting in a 60% reduction in response time and a 40% increase in system stability

TECHNICAL SKILLS

Languages:	**Go (Proficient)**, Python, TypeScript, JavaScript
Frameworks:	**Gin (Proficient)**, Django, Flask, React, Node.js, GraphQL
Databases:	**SQL - [Postgres, MySQL] (Proficient)**, NoSQL - [MongoDB, Cassandra]
Developer Tools and Other Technologies:	**Git (Proficient)**, Docker, Kubernetes, Github Actions, Terraform, AWS, GCP

PROJECTS

Distributed Commit Log Service in Go   Jan 2024 - Jun 2024

Go, Prometheus, OpenTelemetry, Logging, Metrics, Tracing, Observer Pattern

- Built a high-performance commit log service using Go, incorporating Protocol Buffers for efficient serialization and gRPC for robust client-server communication. Improved service reliability and scalability, handling up to 10,000 requests per second.
- Integrated logging, metrics, and tracing into the service, utilizing Prometheus for metrics collection and visualization, which improved system observability and reduced downtime by 35%.

Custom Orchestrator in Go   Aug 2023 - Dec 2023

Go, Table-driven Design, BoltDB, Singleton, Circuit Breaker, Leader Election

- Developed a fully functional orchestrator from scratch using Go, inspired by systems like Kubernetes and Nomad. Implemented core components including the manager, worker, scheduler, and CLI for efficient task management and orchestration.
- Built features to start, stop, and manage Docker containers using the Docker API, ensuring smooth operation and scalability of containerized applications. Developed a scheduling algorithm that optimizes resource allocation across a cluster of worker nodes.
- Integrated metrics collection and monitoring for both tasks and worker nodes to facilitate real-time tracking of system performance. Implemented APIs for collecting and reporting metrics, enhancing the system's observability and maintainability.
- Designed and implemented a persistent storage solution for tasks, ensuring data durability and consistency across system restarts. Explored and applied concepts of high availability and fault tolerance to maintain system reliability and uptime.

EDUCATION

Santa Clara University   Santa Clara, CA

Master of Science in Computer Science, 3.78 / 4.00   Mar 2021 - Dec 2022

University of Mumbai   Mumbai, India

Bachelor of Engineering in Information Technology, 7.05 / 10.00