

PIYUSH JAGADISH BAG

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

EXPERIENCE

Arista Networks

Santa Clara, CA

Software Engineer

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

- Developed and implemented a robust monitoring and alerting system to ensure high availability and performance of distributed databases, leveraging custom dashboards and incident management protocols
- 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