Jaya Sai Krishna Muppalla

Software Engineer

Personal Info

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WWW
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GitHub
https://github.com/jayasai470

Skills

- Java, NodeJs — Expertise
- SpringBoot, Express, NestJS — Advanced
- GoLang, Python — Intermediate
- AWS — Expertise
- Azure, OCI — Intermediate
- Kafka, Kinesis — Advanced
- Flink — Intermediate
- Kubernetes, Helm, Docker — Expertise
- Devops, Terraform, Serverless — Advanced
- MongoDB, Redis, Mysql, ElasticSearch — Advanced
- Prometheus, Traefik, Git(CI/CD), Packer — Advanced
- OpenTelemetry (metrics + logs + traces) — Advanced
- Rest, WebSocket, MQTT, GraphQL — Advanced
- WebRTC, RTSP, gRPC — Intermediate

Summary

Skilled Backend Developer and DevOps Engineer specializing in architecting scalable, high-performance solutions. Expert in leveraging modern technologies to enhance system reliability and streamline operations.

Experience

Feb 2025 - present

Staff Engineer, Back-End Server

Employer:*Samsung Electronics America*

- Developed, maintained, and lead DevOps tasks for backend systems to support interactive ads with mini-games serving across Samsung TVs in North and South America and Europe.
- Developed a GPT-based movie recommendation system using custom Retrieval-Augmented Generation (RAG) techniques to enhance user experience with personalized suggestions.
- Implemented sophisticated AI-driven features by utilizing the LangChain framework with Azure OpenAI and OpenAI's language models, and integrated vector database like Azure AI Search and Redis vector module to optimize data retrieval and storage processes.
- Managed infrastructure setup and enhancements using Terraform and Helm, including CI/CD pipelines, while upgrading Kubernetes from version 1.26 to 1.33 with zero downtime.
- Implemented OpenTelemetry for comprehensive log, metric, and trace collection, creating automated dashboards and alerts using metrics.

March 2022 - Jan 2025

Engineer 3, Software Process engineer

Employer:*Samsung Electronics America*

- Developed a low-latency game streaming platform ensuring high-performance delivery.
- Engineered automation for virtual game machine provisioning using KubeVirt (Kubernetes + Virtual Machines) for both AWS and OCI metal machines.
- Implemented game execution on virtual machines with both Nvidia and AMD GPUs using vGPU/SR-IOV on Windows/Linux systems.
- Innovated an economical method to make game machines accessible by designing a custom Kubernetes host port operator.
- Established and managed a Rook + Ceph storage cluster to facilitate Read-Only Many (ROX) persistent volume claims, compensating for AWS's lack of native support.
- Enhanced the Puppetlabs PVPool controller by integrating Kubernetes volume snapshots, enabling near-instant PVC replication for efficient game data hosting.

July 2019 - Feb 2022

Engineer 2, Software Process engineer

Employer:*Samsung Electronics America*

- Developed an indoor positioning system using beacon technology for proximity detection and contributed to contact tracing solutions for wearable devices.
- Utilized Apache Flink for real-time stream processing and implemented Complex Event Processing (CEP) for advanced event pattern detection.
- Designed and implemented microservices using a Function-as-a-Service (FAAS) model, adopting an event-driven architecture hosted on AWS, with deployment automation via Serverless framework.
- Built fully reactive applications leveraging Spring WebFlux, MongoDB, and Kafka for responsive and scalable solutions.

Aug 2015 - July 2019

Server Engineer

Employer:*Samsung Electronics America (Contractor)*

- Implemented GeoSpatial queries and GeoHashing for Geofence and location-based alert functionalities.
- Utilized various mapping APIs such as OpenStreetMaps, Leaflet, Google Maps, and HERE Maps for geocoding and data visualization.
- Contributed to all aspects of app development and DevOps, including client-side, server-side, CMS (Magnolia), and Kafka streaming, ensuring scalable production.
- Conducted rapid prototyping for proof of concepts with emerging technologies, ensuring their maturity for production-grade deployment on AWS.

Education

Aug 2013 - May 2015

University of Missouri Kansas City (UMKC)

Masters in Computer Science

Masters in Computer Science

May 2009 - April 2013

Jawaharlal Nehru Technological University

Bachelor's in Electronics and Communication Engineering