SASHANK AGARWAL

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EDUCATION

UNIVERSITY OF SOUTHERN CALIFORNIA | Master of Science in Computer Science (MSCS) **|** GPA: 3.75/4.0 May 2025 (expected)
Relevant Courses: Analysis of Algorithms, Database Systems, Web Technologies, Advanced Operating Systems, Distributed Systems

RAMAIAH INSTITUTE OF TECHNOLOGY | Bachelor of Engineering in Computer Science and Engineering **|** GPA: 3.96/4.0 August 2020
Relevant Courses: Algorithms, Data Structures, Operating Systems, Distributed Systems, Web Technologies, Cloud Computing

SKILLS

Languages: Go/GoLang, Java, Python, NodeJS, Scripting (Shell, Bash), SQL, PostgreSQL, MongoDB, Firebase
Cloud Technologies: Docker, Kubernetes, AWS, Azure, OpenShift, Prometheus, Grafana, Terraform
Miscellaneous: Git, Kafka, Redis, gRPC, Jenkins, GitHub Actions, ArgoCD, Open Policy Agent (OPA)
Core competence: Agile/Scrum, Problem-Solving, Detail-Oriented, Strong Teamwork, Communication

WORK EXPERIENCE

NVIDIA | Cloud Software Infrastructure Intern, AIOPS | California, United States May 2024 – August 2024

- Developed a **Go** application that integrates GPU data from 4 different data sources and normalizes it for compatibility with Prometheus metrics, enhancing data comprehensiveness and accessibility.
- Implemented client and server side **RPC** in Go for invoking short-lived polling jobs.
- Developed a comprehensive Grafana dashboard to visualize Prometheus metrics and PostgreSQL data, providing enhanced decision-making capabilities based on real-time insights and enabling leaders to make informed decisions **80%** faster.
- Implemented role based access to dashboard data to enhance security. Performed a POC on integrating the application with LLM

INTUIT | Software Engineer 2 | Bangalore, India June 2022 – July 2023

- Actively contributed to the Intuit Kubernetes Service team, taking charge of the efficient management of their cloud infrastructure in **AWS** and platform utilizing **Docker**, **Kubernetes** and **Go**, leading to a 15% reduction in infrastructure costs.
- Managed observability stack, including **Prometheus** metrics and **Grafana** dashboards helping in cloud cost optimization.
- Improved the availability and scalability of applications on Intuit's clusters by actively contributing to the open source project 'keikoproj', focused on alert-manager and active-monitor, resulting in a 20% decrease in system downtime.
- Automated functional testing procedures, resulting in a 40% reduction in manual testing effort and ensuring more reliable software releases using **Jenkins**.

RED HAT | Associate Software Engineer | Bangalore, India November 2020 - May 2022

- Actively oversaw the monitoring and alerting of large-scale logs in OpenShift, utilizing **Elasticsearch**, **Fluentd**, and **Kibana** for efficient log management, resulting in a 25% reduction in log processing time.
- Developed and maintained the Loki Operator in collaboration with the Grafana team. Implemented key components such as auto-scaling, alerting, authentication, and authorization using **OIDC, Open Policy Agent (OPA)** for Loki.
- Launched a storage calculator for Loki, predicting log volume in 24 hours and recommending resource requirements for the LokiStack, which led to a 15% reduction in unnecessary resource allocation and cost savings.

PROJECTS

Scalable Metrics Retrieval Solution |github.com/sasagarw/advancedos-project April 2024

- Designed and implemented a scalable metrics retrieval solution using Thanos and Prometheus.
- Addressed challenges of increasing metrics data volume by leveraging Thanos for horizontal scaling of metrics querying and delivery (Thanos Query).
- Conducted comparative analysis with traditional methods across performance, cost, network bandwidth utilization, and storage efficiency. Evaluated additional metrics including time to scale and latency to assess feasibility and effectiveness of the solution.

Learning Python for DevOps | github.com/sasagarw/python-devops-learning December 2023

- Implemented a Lambda function in Python using **Boto3** library to identify and remove stale EBS snapshots, optimizing storage costs on AWS.
- Automated Jira ticket creation from GitHub comments using Python. Deployed a Flask-based Python application on AWS EC2, configured with a webhook for GitHub triggers, enhancing automation and streamlining the ticketing process.
- Configured AWS using IAC (Infrastructure as Code) tool Terraform, managing cloud resources with customized attributes. Implemented S3 backend for remote state storage. Created reusable infrastructure using Terraform modules and managed environments with Terraform workspaces. Integrated Terraform with HashiCorp Vault for secure secret management.

ACHIEVEMENTS

- Elected as **Director of Technology** at USC AIS - leading a team of 4; overseeing the configuration of technical elements for events, resolving technical challenges, executing mass email communications, and maintaining the AIS website. August 2023 - Present