Komal Venugopal Vattumilli

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Education

Master of Science in Computer Software Engineering	Aug 2023 – May 2025
San Jose State University, United States of America	*GPA: 4.00/4.00*
Bachelor of Technology in Computer Science Engineering	Jun 2017 – May 2021
Vellore Institute of Technology, India	*GPA: 4.00/4.00*

***Activities: Graduate Research Assistant (ML)**, Web Developer (ISO), Adobe Student Ambassador, iSucceed Peer Mentor*

Technical Skills

DevOps: Linux, Jenkins, Terraform, Docker, Kubernetes, ArgoCD, Istio, GitLab CI/CD, Ansible, Git, Jira
Languages: Python, GoLang, Java, C++, Groovy, Bash, Flask, Kafka, Spark
Cloud & Databases: Amazon Web Services (AWS), Microsoft Azure, MySQL, MongoDB, Redis, Cassandra
Observability tools: CloudWatch, Prometheus, Grafana, Datadog, ELK, PagerDuty, Newrelic

Experience

Software Engineer Intern | Salesforce **May 2024 – Present**
- Developed a **Java** service integrating **Elasticsearch**, **Grafana** to monitor and provide visibility for 1000+ gate values across multiple data centers which enhanced visibility by 90%.
- Automated remediation actions using **Node.js** and Shell, deployed as **Docker** containers in **AWS Cloud**, integrated with a **React** portal, and implemented machine learning models to predict failures, increasing service uptime by 65%.
- Integrated Salesforce with AWS S3 and Alicloud, utilizing **Cassandra** within a **distributed system framework** to ensure seamless metadata management and data recovery. Employed **Terraform** and **Ansible** for Infrastructure as Code (IaC).

Site Reliability Engineer | Headout **Mar 2023 – Jul 2023**
- Utilized **ArgoCD, Istio** for orchestrating deployment, scaling, routing, and load balancing of EKS Helmcharts across Kubernetes namespaces, enhancing system reliability and reducing deployment times by 40%.
- **Dockerized** stand-alone recommendation system and deployed into Kubernetes cluster to achieve 20% improvement in resource utilization and configured monitoring policies using **Grafana**.
- Developed a **Golang**-based **Kubernetes** controller for orchestrating CRDs, enhancing cluster efficiency and dynamic resource management through concurrency and the client-go library.
- Managed **AWS security groups**, and network connectivity and conducted regular vulnerability scans to ensure timely identification of security threats.

DevOps Engineer | Jivox Corporation **Jan 2021 – Mar 2023**
- Led transition from manual configuration and resource management to automated infrastructure provisioning using **Terraform, Ansible, and Python** reducing TAT by 30%.
- Initiated the establishment of a **Jenkins** server on Amazon Elastic Kubernetes Service (EKS), streamlining the deployment pipelines for multiple micro-services and improved build times by 24%.
- Handled **AWS private cloud infrastructure**, implementing optimizations that resulted in monthly savings of $1,500.
- Actively oversaw the centralized logging and monitoring solutions using **ELK Stack**, **Datadog** resulting in improved incident response times and 25% reduction in log processing time.
- Developed **Apache Airflow** job for Cloudinary asset management & integrated Snowflake resulting in 25% cost reduction.
- Developed and deployed a streaming data ingestion system with Apache Spark and Kafka on AWS EMR, writing to S3. Utilized Jenkins CI/CD for automated deployments and code quality checks, processing over 1 million records hourly.
- Enhanced **MySQL** and **MongoDB** management with performance tuning, replication, and robust backup processes, ensuring high data integrity and system scalability.
- Received 3 Spot Awards and mentored 20+ undergrad interns to complete AWS Certifications and monitored their progress.

Machine Learning Intern | Efftronics Systems Pvt Ltd **May 2019 – Jun 2019**
- Created a **MERN Stack** application to monitor traffic at different junctions of city utilizing Microsoft Vision API.
- Utilized **Microsoft Azure ML Studio** to implement advanced Linear, Exponential, and Random Forest models, accurately forecasting green time and facilitating traffic diversions that led to a 20% decrease in traffic congestion in specific locations.

Projects

Face Mask Detection System | AWS, OpenCV, MYSQL, Python, Flask | Publication
- Developed an AWS EC2-based web app for facial mask detection with auto-scaling, real-time alerts via SNS and Lambda, and global optimization using CloudFront. (Published in a Scopus-indexed journal).

Stanford Treehacks Hackathon - Breathe | GenAI, Tensorflow | Devpost
- Integrated Mistral Llama and Chroma VectorDB into a mental health app for real-time emotional analysis and intelligent therapist matching using PyTorch and TensorFlow for deep learning, and Python for API and data management.

Achievements

Hackathons: 1st in Headout-AI Hackathon | RunnerUp Jivox Byte Riot Hackathon
Publications: Smart Guidance System for Blind | Program Slicing Techniques
Certifications: Certified Kubernetes Administrator, Azure-900, AWS Certified Solutions Architect Associate
Works: Research fellowship by Govt of India | JPMC Virtual Internship | ImmiGPT | SoCalledHappenings - Instagram