

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

Coursework: Teaching Associate (Python), Computer Networks, Database Systems, Web UI/Design, Object Oriented Programming, Distributed Systems, Data Mining, Data Visualization, Machine Learning, Natural Language Processing

Experience

Software Engineer Intern | Salesforce

May 2024 – Present

- Architected and implemented a scalable monitoring system using **Python gRPC** APIs to track 100K+ gates in real-time, leveraging Elastic Search and **Splunk** for data aggregation and analysis.
- Built slack bot using Python Bolt app to automate remediation actions on servers using **Bash** scripting and deployed in Kubernetes. Integrated Random Forest ML model to predict future downtimes and integrated **grafana** dashboards.
- Utilized Git, **Jenkins** for CI/CD and wrote comprehensive unit, integration testing strategies using Mockito.

Research Assistant | San Jose State University

Nov 2023 – Present

- Developed storybook automation system using PyTorch, GANs, LLM, RAG, OCR, and TTS to generate dynamic storybooks and narrative videos for children, integrating AWS services (Bedrock, Sagemaker) for providing context-driven responses.

Software Engineer | Headout

Mar 2023 – Jul 2023

- Implemented reusable Helm chart templates using Terraform, enabling consistent application deployment using ArgoCD and managing Istio, Kiali service mesh within Amazon EKS to reduce inter-service latency by 30%.
- Developed lambda functions to predict the DOS attacks and used AWS WAF for automated blocking systems & protection.
- Developed a secure middle layer Java API service for centralized credential management with **HashiCorp Vault** and developed 10+ GitLab pipelines for automated deployments.
- Built Apache Airflow job for Cloudinary asset deletion automation & integrated Cloudfront to save 8K/monthly bill. Integrated **Golang**-based **Kubernetes** controller to manage Stateful pods for automated failover with **client-go** library.

Software 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%.
- Leveraged Kubernetes to orchestrate scaling, routing, and load balancing across namespaces and dockerized 10+ services staging deployments using ArgoCD leading to 25% reduction of infra cost.
- Initiated the establishment of a Jenkins server for automating EC2 deployments improving build times by 24%. Implemented comprehensive logging system using ELK stack and Datadog for production services.
- Migrated MySQL to RDS with performance tuning, replication and implemented S3 tiering saving 5000\$ monthly. Managed AWS Private Network using AWS security groups, VPN, SSO, and WAF automations using AWS Lambda.

Software Engineer Intern | Efftronics Systems Pvt Ltd

May 2019 – Jun 2019

- Created a **MERN** application using websockets to monitor traffic at different junctions integrating GMaps.
- Analyzed image data from CCTV to train YOLO-based model using NVIDIA GPU for extracting vehicle count by converting to PCUs. Performed Linear, Exponential, and Random Forest models to predict green time with a min 0.06 RMSE value.

Technical Skills

DevOps: Linux, Jenkins, Terraform, Docker, Kubernetes, ArgoCD, Istio, GitLab CI/CD, Ansible, Git, Jira

Technologies: Python, GoLang, Java, C++, Groovy, Bash, Flask, Kafka, Spark, Airflow, REST API

Cloud & Databases: Amazon Web Services (AWS), Microsoft Azure, MySQL, MongoDB, Redis, Cassandra

Observability tools: CloudWatch, Splunk, Nagios, Prometheus, Grafana, Datadog, ELK, PagerDuty, Newrelic

Projects & Achievements

1. **Face Mask Detection (Publication):** Engineered a MERN stack web application to monitor mask compliance using ML models and integrated AWS SNS, Lambda for instant alerts and Cloudfront for global access.
 2. **Immigpt:** Webscraped multiple sites with Selenium and developed a web portal using React and SpringBoot to address immigration-related questions through an LLM chatbot and implemented collaborative filtering for personalized recommendations.
- **Certifications:** 3 Spot [Awards](#), AWS Solutions Architect Assoc, Azure-900, Certified Kubernetes Administrator (CKA)
 - **Hackathons:** Stanford TreeHacks ([Mental Health - ML, GenAI](#)) | Won Headout-AI, Jivox Hackathons (BERT Chatbot)
 - **Works:** JPMC Virtual Internship (Django, Python) | Adobe Student Ambassador | Research fellowship by Govt of India