SOUMYA RANJAN ROUT

Lead SRE/DevOps Engineer: Over 11+ years of experience in designing, implementing and managing cloud-based infrastructure and automation.

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EDUCATION

[September 2022] Master of Science (MSc), Liverpool John Moores University

Computer Science, **Dissertation**: Continuous Behavior-Driven Test Amplification for DevOps

[August 2011] BTech, Biju Patnaik University of Technology

Electronics & Instrumentation Engineering

ACCOMPLISHMENTS (Passionate about building scalable Infrastructure)

Continuous Integration & Continuous Delivery:

- Designed and Implemented branching strategy & CI pipeline for PR and Merge, where automated builds, tests, and Security scans will run (**Bitbucket pipeline, Jenkins pipeline, Gitops**).
- Implemented **100s of continuous delivery** pipelines where code changes are automatically built, tested, and prepared for production release.

Continuous Monitoring and Logging:

- Infrastructure Monitoring, Application Monitoring, and Network Monitoring using **Prometheus, Grafana, Datadog, Splunk, ELK, Nagios**, and **Cloud-watch**.
- Integrated AWS cloud with **DataDog** for **infrastructure** and **logging**.

Configuration Management Tools:

- Implemented a configuration management tool for automated application deployment, resulting in a 90% reduction in deployment time. Worked with multiple configuration management tools (**Ansible, Chef, Puppet, Salt Stack**)
- Developed automated deployment pipelines using Ansible and Git, increasing deployment frequency by 60%.

Infrastructure as Code:

- Led a team in implementing **Infrastructure as Code (IaC)** practices **Terraform**..
- Designed and implemented an automated infrastructure provisioning solution using Terraform, resulting in a **50% reduction** in infrastructure creation time and improved resource utilization.
- Managed a **complex multi-environment** (Production, Staging, Testing) using Terraform, ensuring consistent infrastructure configurations and streamlined deployments across multiple regions.
- Automated the deployment of AWS resources across (Production, Staging, and Testing) environments using Terraform, reducing manual effort by 90%.

Security and pipeline scan:

- Secure continuous integration and continuous delivery (CI/CD) pipelines.
- **SonarQube scanner**(static code analysis). **Penetration testing** for a web application **HostedScan**.

Containerization and Orchestration:

- Implemented **Docker** containers for application packaging and deployment, resulting in improved portability and scalability.
- Orchestrated containerized applications using **Kubernetes**, effectively managing scalability, high availability, and automated deployment.

Deployment Strategies:
- Highly experienced in deployment strategies such as **In-Place Deployments, Blue-Green Deployments, Canary Deployments, Linear Deployments, All-at-once Deployments, Rolling Deployments, Rolling with Additional Batch, and Immutable Deployments**.
- Design/develop **deployment strategies** that change incrementally and track application health according to configurable rules.
- Deployments can easily be stopped and **rolled bac**k if there are errors.

QA Automation:
- Automation Testing with **Python & Go**. Expertise in writing Test strategy, Test Plan Preparation and Implementation, Test Case Design, Test Tool usage, Test execution, Defect Management and Defect Tracking.

Behavior-Driven Test:
- Automated Behavior Driven Test(**Python, Go**) using **cucumber BDD framework** also integrated with CI/CD pipeline for a faster software release.

AWS Cloud:
- Highly experienced in the design and implementation of **AWS** resources **EC2, Lambda, SQS, SNS, ACM, ELB, EKS, ECR, AMI, IAM, S3, ELBs, API Gateway, RDS, Fargate, ECS, DynamoDB, Aurora, Route53** and **EFS volume**.

Development using High-level Language:
- Designed and developed a **Python** tool that automates infrastructure creation using the Boto3 library.
- **Python Django** application developed for different use cases. (**Infrastructure creation, Monitoring, Integration services**)
- **Golang** for **Behavior-Driven Testing** BDT and multi-cloud CLI.
- The tool was used to create cloud infrastructure for a significant client, resulting in a **50% reduction** in infrastructure setup time.

WORK EXPERIENCE

Lead SRE/DevOps Engineer, Renoworks Software, Jan 2022 – Till now

- Managed a team of DevOps engineers, responsible for developing and implementing DevOps strategies, tooling, and processes for multiple projects.
- Managed **AWS** services, cloud security, **CI/CD pipelines**, and built testing frameworks. Implemented Kafka and integrated it with Java.
- Implemented **Python Django** application that integrates with AI model.
- Designed and Implemented **microservice** architecture for backend services and migrated from **monolithic** applications.
- Implemented **SonarQube** and **Nexus** repository to automate CI/CD pipeline.

Senior Member Technical Staff (SRE), Oracle, June 2021 – Jan 2022

- Created an API Testing **Golang** based on **BDT Cucumber**.
- Designed a pipeline for **CI/CD** deployment of **microservices**.
- Automated the creation of DNS A records using Terraform for multi-region release.

Senior Software Engineer (DevOps), Walmart, July 2020 – June 2021

- Designed and implemented CI/CD pipelines, branching, and deployment strategies for **Azure and On-premise Datacenter** (both VM & Kubernetes).
- Integrated SonarQube **SAST** tool into the CI/CD pipeline.
- Developed **Python CLI** for infrastructure.
- Developed an automated testing framework using Cucumber and Python, reducing manual testing efforts by 50%.

Automation Engineer (Developer Productivity Engineer), Rubrik Inc., May 2019 – July 2020

- We implemented Kubernetes in **AWS EKS** with **ingress** and **Kong API gateway** with OAuth2.0.
- Implemented and Maintained the Kong API gateway.
- Developed a unique Python programme to communicate with Kong.
- Developed Golang application for Rubrik on Rubrik.
- Developed Python Django-based application **RCF** for resource management.
- Created a full-stack application (**Python Django**, React) to handle resources in VMware.
- Implemented tools using Ansible and Terraform to build infrastructure and Kubernetes clusters from CLI.

Software Technologist II, Philips, October 2017 – May 2019

- Developed a service **one-click deployment** using Python, Ansible, and Terraform.
- Created and operated distributed logging: **ELK, EFK**.
- Implemented **Zero-downtime** continuous deployment by rolling upgrade strategy.
- Automated **rolling restart** of servers with Zero-downtime.

Senior Software Engineer I (SRE), FIS, September 2016 – September 2017

- Worked on JENKINS files and shell provisioning scripts for SDP platform installation.
- Collaborated with a development team of 6 to deliver a fully automated CI/CD pipeline ahead of schedule.

Software Engineer, Flipkart (TEKsystems), August 2012 – September 2016

- Developed a Python application for monitoring using the Django MVC model.
- Integrated GitHub, Maven, Jenkins, and Puppet for CI/CD pipelines, reducing deployment time from 1 hour to 30 minutes.
- Contributed to the development of CI/CD pipelines using Jenkins, enabling efficient software delivery.
- Assisted with monitoring and log aggregation using ELK Stack, helping to identify and resolve system issues.

PROJECTS

Site Auto Deployment, Philips, September 2017 – September 2019

- Designed and developed a Python tool that automates infrastructure creation using Terraform and Ansible.
- Resulted in a 50% reduction in infrastructure setup time for a major client.

BDT Testing Framework in CI/CD Pipeline, Renoworks, Jan 2022 – Jun 2023

- Developed and implemented a **Behavior-Driven Testing** (BDT) framework for automated testing in a CI/CD pipeline.
- Reduced manual testing efforts by 50% and improved software quality and reliability.

PUBLICATIONS:

https://medium.com/@soumya-rout/continuous-behavior-driven-testing-fdcc13fdd71e