

Suraj Kumar Sah

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CERTIFICATIONS

- Certified Kubernetes Administrator(Nov 2023 - Nov 2026), CNCF

EDUCATION

Bachelor of Science in Computer Science

2016-2020

Kathmandu University, Nepal

Research Papers

- **S. K. Sah**, and L. K. Sah, "Variable Record Table: A Unified Hardware-Assisted Framework for Runtime Security (Accepted)" 68th IEEE International Midwest Symposium on Circuits and Systems (MWSCAS), Lansing, MI, USA, 2025
- **S. K. Sah**, and L. K. Sah, "VRT: A Runtime Protection Against Back-Edge CFI Violation," 67th IEEE International Midwest Symposium on Circuits and Systems (MWSCAS), Springfield, MA, USA, 2024
- **S. K. Sah**, M. D. Upadhaya, and R. Shrestha, "The Role of AI on Jobs, Human Rights, and Education During Pre and Post COVID-19 Pandemic." HBRP Publication Research and Reviews: Advancement in Robotics Volume 4 Issue 1, Ghaziabad, Uttar Pradesh 201014, India 2021, pp. 1-11
- **S. K. Sah**, R. Bhandari, Y. Bhandari, and A. Paudel, "Cloud Computing Architecture For Higher Education In The Context Of Nepal After Covid-19." (About to Submit)
- **S. K. Sah**, R. Bhandari, Y. Bhandari, and A. Paudel, "Development of Modern Framework of Learning Through The Use Of Digital Technologies." (About to Submit)

WORK EXPERIENCE

Lead DevOps Engineer

Aug 2024 - Present

Soliish

- Led efforts to achieve SOC 2 readiness and HIPAA compliance, including protection of PHI, by deploying monitoring, alerting, and policy enforcement tools across cloud and endpoint environments.
- Deployed Wazuh for compliance monitoring, including HIPAA and SOC2 requirements, with alerting for suspicious activity and vulnerability tracking to ensure a secure infrastructure.
- Implemented FleetDM for managing and monitoring laptops and devices (PCs and Macs), including policies for USB usage and external device restrictions.
- Designed GitHub Actions pipelines integrated with SonarQube, Trivy, OWASP Zap, and Snyk for code quality and security. Automated environment setups and deployments using Terraform Cloud and GitHub workflows. Created Kubernetes Helm charts and CronJobs for streamlined operations and task automation.
- Implemented and managed AWS EKS clusters with features like Velero backups, cluster autoscaling, and internal metrics scraping. Automated infrastructure provisioning and management using Terraform, including S3 backups, Aurora databases, and AWS Secret Manager integrations. Mi-

grated and optimized AWS environments, leveraging Spot instances for cost efficiency and enhancing security with AWS Macie and Guard Duty.

- Developed monitoring and alerting systems with Prometheus, including admin login alerts and infrastructure anomaly detection. Implemented backup policies for Kubernetes clusters and Microsoft 365 accounts, ensuring data integrity and recovery.
- Configured SSO solutions with custom domains and AWS IDP for secure user access. Streamlined Microsoft 365 user management and optimized access control across AWS accounts.
- Deployed secure and scalable applications using Kubernetes and Terraform, including PDF generators and Passbolt integrations. Resolved ECS deployment and pipeline issues to ensure system stability and performance.
- Enhanced team collaboration with updated documentation and digitized architecture diagrams. Standardized repository and workflow practices to improve operational efficiency.

DevOps Engineer

Feb 2023 - Dec 2024

12iD

- Site-to-site VPN in Azure with Banks on-prem servers to make communications seamlessly and securely.
- Setup Logging, Monitoring and Alerting with Prometheus, Grafana, Loki, promtail, Alertmanager and store index files to Azure blob storage.
- GitHub Actions with GitHub workflows implemented for CICD to GKE and AKS
- Setup and Deployed Applications to the banks with proper networking and secure protocol.
- Set up Istio Service Mesh to all applications with all the available telemetries like Grafana, Prometheus, Kiali, and Alert Manager to specific channels like emails and Slack.
- Setup CICD for GKE using cloud build and cloud deploy and AKS using Github Action workflow.
- Migrating all the infrastructure from AWS to GCP as well as Azure
- Moving all the containerized applications to EKS clusters with CICD pipelines and service mesh enabled.
- containerization of all the applications

DevOps Engineer

Apr 2021- Jan 2023

Grepssr

- Orchestrated Development, Staging, and Production servers for moving all the applications and services to AWS Elastic Kubernetes Service(EKS) via Terraform, Ansible, Drone CI, and ArgoCD with Istio-Service-Mesh enabled.
- Manage every AWS Service through Terraform Cloud and Applications with version control to Bitbucket.
- Setup Staging/Development Kubernetes Cluster from scratch; moved all the applications and services to Kubernetes with Istio-Service-Mesh enabled on-premise with the help of Helm charts.
- Setup Production applications and services with EKS with Istio-Service-Mesh enabled and managed with Helm charts.
- Setup Kiali, Grafana, Prometheus, ElasticSearch Fluentd Kibana (EFK), RabbitMQ, Apache Flink, Ververica Platform, and many more.
- Server monitoring with New Relic and Opsgenie to notify the right people at the right time.
- Enrich and own the production, staging, and development environments' security, availability, reliability, and cost optimization for each region with detailed monitoring.
- Datahub in Production, Staging, and Development servers for data discovery, cataloging, observability, and governance.
- Document every deployment in Notion for specific environment versioning processes and changes in detail.

DevOps Engineer

Jan 2021 - Apr 2021

AITC

- Manage Every AWS User and Group with Roles and Policies from Terraform.
- Manage/Maintenance/Secure Azure Servers installations and configuration with dedicated network security groups.
- Installation of Mattermost for internal employee messaging.
- Set up AWS Windows RDP servers for all the employees to use for Application development with necessary permissions and policies.
- Set up AWS services like S3 bucket, EC2 instances, ECR repositories, and many more from Terraform for CICD.

Teaching Assistance

Spring 21-Fall 22

NIMS College (Tribhuvan University) and CARIBBEAN College (Tribhuvan University)

- Operating System(x3), Computer Networks(x2), Web Technology(x2)

AWS System Administrator

Aug 2020 - Nov 2020

Genese Solution Pvt. Ltd.

- AWS SSO integration to G-suite
- Nagios XI, Nagios Core, Nagios Fusion full setup with monitoring websites and databases with NTC SMTP.
- Rocket Chat content mixed and certification.
- Joomla full setup in AWS EC2 from the SMTP to G-Suite.
- Internal Website Security strengthening by Amazon Inspector.
- Onboarding and Removing Staff in Rocket chat, Trello, Freshdesk, AWS(Phuyal, genese-pk/demo/sandbox/np/uk/bd, e-points and syspass).
- Backup G-suite Data Migration of one user Account to other existing employees.
- Email IMAP and Forward email to the separate emails with all the ownership access.
- Namecheap DNS routing, Redirect, Creating Records like CNAME, A Records, MX Records, TXT records, and adding SSL certification from AWS.
- Support contact to the AWS, Google, and Ali Baba from the console.
- VPN setup for the Internal server security(OpenVPN FortiGate).
- Lambda function created for route53 backup to S3 bucket.
- Active Directory Setup and also users added for Nagios, syspass, Trello, and other integration.
- Apache server and MySQL server install in windows server for Nagios and Invoice application.
- Microsoft 365 office setup via the Company's domain and Adding the Necessary Groups and Users.
- Docker Containers and Virtualization.

Research Volunteer

Jan 2019 - Nov 2020

In Digital Learning Research Laboratory (DLR-Lab) at Kathmandu University

- Cognitive Science, Child Computer Interaction, Cloud Computing, Artificial Intelligence and Human Rights.

Sub-Trainer

(6-8)Jan,2020

*By **Nsdevil** team for 7th U-Learning Training Program at Pulchowk Campus.*

- Training on how to apply Ubiquitous Based Learning cloud system for learning mechanism in primary school.
- Understanding and providing skills to use U-Learning box, Smart Tray for optimum teaching experience.

Sub-Trainer at Syangja

feb, 2018

*By **HELP NEPAL NETWORK eLIBRARY** for one eLIBRARY per District Training in collaboration with KUOSC*

- To reach local governmental schools with minimum hardware equipment with the maximum learning environment.
- To repair/install/update/upgrade Open Source Software and also provide mandatory training.

SKILLS

- AWS Cloud:
 - Containers: ECS, EKS, ECR
 - Compute: EC2, AutoScaling, Lambda
 - Databases: RDS, DynamoDB
 - Storage: S3, EFS, EBS
 - Networking: API Gateway, VPC, Route53
 - Analytics: Kinesis, Elasticsearch, DataPipeline
 - Security: IAM, Secrets Manager, ACM, Security Groups
 - App Integration: SNS, SQS
- Google Cloud Platform:
 - Containers: Kubernetes Engine (GKE), Cloud Run, Container Registry
 - Compute: Compute Engine, Managed Instance Groups
 - Storage: Cloud Storage, Persistent Disk
 - Networking: Endpoints, Virtual Private Cloud (VPC), Cloud DNS
 - Security: IAM, Secret Manager, SSL Certificates, Firewall Rules
 - CI/CD: Cloud Build, Cloud Artifacts, Cloud Deploy
 - App Integration: Pub/Sub, Tasks
- Azure Cloud:
 - Containers: Azure Kubernetes Service (AKS), Azure Container Registry (ACR)
 - Compute: Virtual Machines, Virtual Machine Scale Sets
 - Databases: Azure SQL Database
 - Storage: Blob Storage, File Storage, Disk Storage
 - Networking: Azure Load Balancer, Virtual Network, Azure DNS
 - Security: Azure Active Directory, Key Vault, Security Center, Network Security Groups
 - CI/CD: Azure DevOps, GitHub Actions
- Languages: Python, Rust, C, C++
- Documentation: Latex
- Linux: System and Application Development, Administering
- Automation: CI/CD, Argo CD, DroneIO, Jenkins, Ansible, Terraform, Bash
- Containers:
 - Use docker for almost every container runtime environment
 - Docker Swarm, Kubernetes, and EKS for Orchestrators
- Service Mesh: Istio Service Mesh, Kong and HAProxy Kubernetes Ingress Controller
- Testing: Cypress
- Data catalog: Datahub
- Architecture
- Open Source
- Knowledge Sharing
- Monitoring and Metrics: Nagios, Grafana, Prometheus, Kiali
- Logging: ELK Stack, CloudWatch, Loki
- Systems Administration

ACADEMIC PROJECTS

Abandon Object Detection

Machine Learning

- Track and alert abandon objects in public places using Image Recognition.

Gyaan Goon

Flutter(Dart)

- Mobile application developed using Dart and flutter for handwriting recognition.
- Used image recognition for handwriting pattern.
- Children friendly user interface.
- Effective for primary level children

Surakchit Ghar

Django and Arduino

- Home automation project for controlling appliances.
- Web based online interface to interact with the appliances anytime anywhere.

Internet Health Nepal

Node.js and MongoDB

- Funded by University Grant Commission
- Internet Speed Testing online web application specially designed for Namobuddha Municipality.

University Management System

PHP and MYSQL

- A web-based platform developed for managing university Courses, Teachers, Student, Exams, and Grade.
- Easy to navigate and store attributes.

Snake Game

C++ and SFML

- Desktop application designed in graphical interface with basic coding.