

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, "VRT: A Runtime Protection Against Back-Edge CFI Violation," 67th IEEE International Midwest Symposium on Circuits and Systems (MWSCAS), Springfield, MA, USA, 2024 (Accepted)
- **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

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

Grepsr

- 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
AITC

Jan 2021 - Apr 2021

- 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 MangoDB

- 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.