# Yash Mittal

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## Experience

**Infra360** **Jan 2025 – Present**

***Associate DevOps Engineer***

- Built AWS cost optimization automation analyzing 200+ ECS services with various other aws services across regions, delivering **$120K annual savings** through rightsizing & Reserved Instances recommendations and utilization analysis.
- Architected self-hosted GitHub Actions runners using **Actions Runner Controller (ARC)** scale-sets on **EKS** with **Karpenter**-managed Spot/on-demand node pools, tuning instance families and CPU request/limit sizing to eliminate mis-provisioned nodes, reducing build times by **25%** and CI costs by **40%** for 15+ production repositories.
- Standardized CI/CD across 15+ client repositories by building reusable GitHub Actions workflows, custom actions, and centralized secrets management, eliminating per-repo pipeline duplication and reducing new-pipeline setup time by 50%.
- Centralized Helm chart architecture around a shared base chart with template inheritance (aliasing, global values, conditional rendering), validating against live manifests before rollout and publishing to ChartMuseum, standardizing deployment across 15+ microservices and cutting per-service onboarding from $\tilde{2}$ hours to under 20 minutes.
- Hardened **zero-trust security** using **Teleport** with GitHub SSO, eliminating public database access while providing secure, auditable access to 50+ RDS and 100 server from different clouds (AWS, GCP, Oracle, Hetzner) resources for 100+ developers and securely close **SSH** port.
- Provisioned **multi-AZ EKS clusters** using Terraform, configured **ArgoCD** for declarative CD with sync policies, deployed **EFK** stack with **Fluentd DaemonSets** for distributed **log** collection across **15+ microservices**, and migrated services off long-lived credentials onto **IRSA** using OIDC federation.
- Orchestrated **multi-cloud infrastructure** using **Terraform modules** across AWS and GCP, expanding production into a new AWS region with cross-account IAM role assumption, RDS, and Kinesis Firehose log delivery, and refactored a GCP IaC codebase (GKE, CloudSQL, Memorystore) to eliminate drift between code and live infrastructure; integrated **DevSecOps pipelines** with Trivy and SonarQube for vulnerability scanning.
- Established AWS **KMS Customer Managed Keys** using **CloudHSM**, enabling **multi-Region** key replication and secure **cross-account** encryption/decryption access via IAM and key policies.
- Led an organization-wide **secret scanning using TruffleHog**, identified exposed credentials across 100+ GitHub repositories, **rotated compromised secrets**, and migrated sensitive values to **Vault** for secure secret management.
- Automated a **GitHub Actions workflow** to automatically scan 100% **pull requests**, enforcing **secret detection gates** and **blocking merges** into protected production branches.
- Designed **Disaster Recovery strategy** using **AWS Backup** and **Terraform** with an **active-passive** setup, leveraging **Customer Managed KMS keys** for encrypted backup vaults, ensuring business continuity and **RTO/RPO** compliance across critical production workloads.
- Led incident response and security forensics across production infrastructure, root-causing a Teleport access outage from a security-group/reverse-tunnel interaction, discovering and rotating a hardcoded AWS access key exposed in production container images, and building a CloudTrail forensics tool that cut credential-compromise investigation time from 5 minutes to under 35 seconds.

**TIFIN** **Jul 2024 – Oct 2024**

***DevOps Engineer Intern***

- Monitored EC2 and EKS infrastructure using Prometheus, Grafana, and AWS Service Discovery, creating real-time performance dashboards
- Optimized Dockerfiles with multi-stage builds, reducing image sizes by **60%** and improving CI build times by **30%**
- Instrumented 10 Kubernetes microservices with OpenTelemetry and Jaeger, reducing mean time to diagnose production issues by 30%.
- Refactored GitLab CI/CD pipelines into modular stages and automated RDS/S3 cross-account migrations with Bash, reducing migration effort from 2 hours to 30 minutes.

## Selected Projects

**SchemaPilot – Database Migration & Governance Platform** | *Node.js/TypeScript, Fastify, React, PostgreSQL, ECS Fargate*

- Architected and shipped a production database change-management platform from scratch to replace a legacy tool that relied on a hardcoded-plaintext-credentials backdoor script, closing a standing security gap.
- Built AST-based SQL validation with an allowlist engine, transactional dry-run/apply with automatic rollback, and safe handling of online operations like `CREATE INDEX CONCURRENTLY`.

- Implemented Google SSO (OIDC) authentication with two-tier RBAC, encrypted credential storage, and a full request-approve-apply governance workflow with audit trails and rollback support.
- Ran adversarial security reviews that identified and fixed two critical vulnerabilities pre-launch, including an approval-bypass flaw and an authorization middleware short-circuit.
- Deployed to production on ECS Fargate with a 95-test CI suite and PR-gated branch protection; supports schema diffing and drift detection across a 26-database, 5-region multi-tenant fleet.

## Technical Skills

**Languages & Scripting**: Python scripting, Bash
**DevOps & Automation**: Linux, Terraform (IaC), Ansible, Docker, Kubernetes, Helm, ArgoCD, Jenkins, GitHub Actions, GitLab CI/CD, GitOps, Nginx
**Cloud**: AWS (EC2, ECS, EKS, RDS, S3, VPC, Lambda, Client VPN, CloudWatch, ECR, Auto Scaling, Cloudfront, Cost Explorer, Load balancer), GCP (GKE, Compute Engine, CloudSQL, Memorystore, VPC, IAM, Cloud Logging & Monitoring)
**Observability**: Prometheus, Grafana, Jaeger, New Relic, OpenTelemetry, Elasticsearch, Kibana, fluentd, CloudWatch, Site24x7
**DevSecOps**: Teleport, Trivy, SonarQube (SAST), IAM, Security Hub, Guard Duty, AWS Config, ScoutSuite, Prowler
**Databases**: AWS RDS (PostgreSQL, MySQL), SQL, MongoDb, Redis
**Tools**: Git, GitHub, GitLab, Postman, Confluence , Jenkins, Lens

## Certifications & Learning

- **Google Cloud Certified Associate Cloud Engineer (ACE)**
- Preparing for **Certified Kubernetes Administrator (CKA)**
- Master Spring Boot 3 & Spring Framework 6 with Java
- Postman API Fundamentals Student Expert
- **3rd Position** out of 100+ participants at TECHNORAX V9.0 Hackathon

## Education

**Guru Gobind Singh Indraprastha University** **2021 – 2025**
*Bachelor of Technology in Information Technology* *CGPA: 8.5/10.0*