Akash Pawar

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Summary

Site Reliability/DevOps Engineer with 2.8+ years of experience building resilient, cloud-native systems across AWS and Azure. Experienced in all aspects of the DevOps lifecycle including infrastructure provisioning, observability, CI/CD, application deployment, and internal tooling. Led multi-cloud migrations and built cost-optimized, scalable EKS infrastructure. Winner of CNCF Pune Hackathon 2025 for developing an SRE platform. Skilled in Terraform, Kubernetes, Karpenter, GitOps and incident response—driven to build self-healing, reliable systems.

Certifications

- <u>Certified Kubernetes Administrator</u> — <u>AWS Solutions Architect</u> — <u>AWS Certified Developer</u>

Key Achievements

Winner – CNCF Pune Hackathon 2025   **June 2025**
Cloud Native Hackathon - Team Kubetux   *Pune, India*

- Won 1st place building production-grade SRE platform with automated CI/CD, Kubernetes observability stack, and secure Karpenter-based autoscaling infrastructure.
- <u>Official CNCF Recognition</u>

Experience

DevOps Engineer   **Dec 2022 – Present**
Trames Private Limited   *India, Remote*

- **Cloud Migration & Cost Optimization:** Migrated Azure WebApps and VMs to EKS with HPA, KEDA, & Karpenter, enabling on-demand scaling and removing need for over-provisioning during peak loads. Automated shutdown of dev stage workloads at night/weekends, cutting dev costs by $\sim$ **45**% and overall cloud spend by $\sim$ **55**% ($\sim$ **65k** USD annually) using reserved instances, spot instances, and Lambda/EventBridge scheduling.
- **Kubernetes Infrastructure:** Built production EKS clusters via Terraform with multi-node groups, ALB Controller, EBS CSI driver, and **IRSA**. Deployed **HPA** for resource scaling, **KEDA** for SQS-driven scaling, and **Karpenter** for autoscaling infra .
- **GitOps & CI/CD:** Delivered GitOps pipeline using **ArgoCD** (app-of-apps) with **ESO** for secrets. Configured **GitHub Actions** with self-hosted runners, also implemented **AWS CodePipeline**, and **Azure DevOps** with automated CICD .
- **Observability Stack:** Delivered end-to-end visibility using open-source, paid, and cloud-native tools—**Prometheus** and **Grafana** for metrics/alerting, **OpenSearch** for fast text-based log search, **Fluent Bit** for log shipping, **CloudWatch** & **Logz.io** for centralized analytics—improving incident resolution speed and troubleshooting efficiency.
- **Incident Management:** Integrated **Prometheus, Alertmanager, and Slack** for SLO-based alerts. Auto **blameless postmortems** with a Python CLI, collaborating with teams for stable deployments and faster resolution.
- **Serverless & Automation:** Designed event-driven backends using **API Gateway**, **Lambda**, **S3**, **SQS**, and **SAM** for Deployment. Automated infra provisioning via **Terraform** . Hands experience with **AWS CDK** (NodeJs / Boto3). Built Python/Ansible-based internal monitoring tools.
- **Database Migration:** Migrated production PostgreSQL from **Azure PostgreSQL Servers** to AWS RDS with minimal downtime, ensuring data integrity and performance optimization.
- **Security & Networking:** Enforced **IAM**, **RBAC**, **IRSA**, and **AWS Identity Center** for access control. Configured **GuardDuty**, **OpenVPN**, **VPC** peering, and **Kubernetes Network Policies** for secure routing. Integrated **Tailscale** subnet router to securely connect multi-cloud private networks.
- **Advanced Networking & DNS Optimization:** Resolved Kubernetes service disruptions by tuning `ndots`, enforcing FQDN usage, and optimizing DNS lookups, reducing query latency and improving cluster reliability.
- **Cost Analyzer Platform (MCP):** Built an MCP server using the Backend Model Context Protocol to provide cost intelligence APIs via **AWS Cost Explorer** (**boto3**), enabling integration with LLM-based natural language queries for cloud spend analysis.
- **Graceful Shutdown & Pod Lifecycle Management:** Prevented 500 errors during scale-in by implementing `preStop` hooks, `SIGTERM` handling, and readiness probes, ensuring ALB deregisters pods before termination for zero-downtime rollouts.

Personal Projects & POCs

Distributed TensorFlow Job Scheduling with Volcano   **2025**

Exploratory POC – Kubernetes GPU Scheduling

- Built a POC for distributed TensorFlow training using **Volcano Scheduler** on Kubernetes with **Gang scheduling** across **NVIDIA GPU nodes**. Deployed on `g4dn.xlarge` to simulate HPC-style GPU orchestration and parallel ML workflows.
- GitHub: `github.com/akash202k/nvidia-gpu-volcano-k8s`

akashshare – Peer-to-Peer File Sharing CLI Tool   **2025**

Networking POC – TCP/UDP Protocols

- Developed a cross-platform file-sharing tool inspired by ShareIt/Xender using **TCP** for reliable transfer and **UDP** for peer discovery. Built to explore low-level networking concepts, socket programming, and protocol behavior.
- GitHub: `github.com/akash202k/shareit`

Technical Skills

- **Cloud Platforms:** AWS (EC2, EKS, Lambda, S3, IAM), Azure (VM, AKS, App Service), Kubernetes, Docker, Helm
- **Infrastructure as Code:** Terraform, AWS CDK
- **CI/CD & GitOps:** GitHub Actions, AWS CodePipeline, Azure DevOps, ArgoCD, Azure Pipeline
- **Programming & Scripting:** Python, Node.js, TypeScript, Bash, boto3, Basics of Golang
- **Monitoring & Observability:** Prometheus, Grafana, OpenSearch, Fluent Bit, CloudWatch, Logz.io
- **Databases & Messaging:** PostgreSQL, MongoDB, SQS, EventBridge, Redis
- **Security & Networking:** IAM, IRSA, RBAC, VPN, ALB/NLB, GuardDuty, VPC/VNet, Security Groups, NACLs
- **Tools & Technologies:** NGINX, ESO (External Secrets Operator), Karpenter, SAM, Ansible, Slack integrations

Education

MIT Academy of Engineering (MITAOE)   **2019 – 2023**

B.Tech in Electronics & Telecommunication, Cloud Computing Specialization   *Pune, India*