

HARSHIT MANI TRIPATHI

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SUMMARY

DevOps / Infrastructure Engineer focused on self-hosted hybrid infrastructure, networking, automation, and observability. Operating a self-hosted homelab spanning on-prem (Proxmox) and Oracle Cloud Infrastructure across ARM and x86, running 20+ services with a recursive DNS stack processing ~500k queries at ~75% cache efficiency, identity-based access via Keycloak SSO, and infrastructure managed through OpenTofu / Terraform.

SKILLS

Infrastructure & Cloud: Oracle Cloud Infrastructure, HashiCorp Cloud Platform, Proxmox, Docker, Linux

Infrastructure as Code & Automation: OpenTofu / Terraform, Ansible, GitHub Actions, Git

Networking and Identity Management: TCP/IP, DNS, VLANs, Firewalls, Traefik, OPNsense, Keycloak

Observability: Prometheus, Grafana, Loki, Tempo

Languages: Go, Python, Bash, JavaScript

INFRASTRUCTURE PROJECTS

Homelab - Hybrid Infrastructure Platform

Oct 2021 - Present

OCI, HCP, Proxmox, Linux, Docker, Keycloak, OpenTofu / Terraform

- Architected dual-region hybrid platform combining on-prem KVM virtualization and Oracle Cloud Infrastructure across ARM and x86 compute.
- Implemented VLAN-based network segmentation with stateful firewall, isolating security zones and enforcing east-west traffic policy.
- Deployed reverse proxy ingress with Redis-backed dynamic service discovery and OpenID Connect SSO enforced at the edge via Keycloak.
- Automated Cloudflare DNS via OpenTofu with remote state on HCP; PR-triggered plan comments and merge-gated apply enforcing GitOps workflow.
- Established WireGuard-based private overlay network routing internal service traffic across on-prem and cloud tenancies.

Recursive DNS Infrastructure

Jul 2025 - Present

Unbound, Cloudflare, OCI, WireGuard

- Designed and operated a validating recursive resolver processing ~500k queries at ~75% cache hit rate and ~40-80ms median resolution latency.
- Deployed automated blocklist pipeline on a weekly update cycle, filtering unwanted domains at the resolver level.
- Synchronized resolver configuration across on-prem and cloud nodes via automated replication over the private mesh network.

Observability Stack

Apr 2025 - Present

Prometheus, Grafana, Loki, Tempo

- Built and operate a centralized observability platform covering metrics, logs, and distributed traces across containerized and bare-metal workloads.
- Operated Dynatrace and Dash0 for APM and distributed tracing during production incident simulations.

OPEN SOURCE and COMMUNITY

Open Source Contribution - Linkme Static Site Generator (40+ stars)

Jan 2026 - Present

Go, HTML Templates, GitHub Actions, CI/CD

- Contributed 5+ features to LinkMe, a Go-based static site generator, including favicon configuration, analytics integration, and Lucide icon support via YAML-driven config.
- Built GitHub Actions CI/CD pipeline for automated deployment to GitHub Pages.

Incident Response Simulation - CNCF Noida Chapter SRE Games

May 2025 & Dec 2025

Kubernetes, Dynatrace, Dash0, Randoli, Kubectf

- Investigated service outages in a Kubernetes microservices application using kubectf and observability tooling to analyze logs, metrics, and distributed traces.
- Performed root cause analysis using the 5 Whys methodology under time-limited incident conditions.

TECHNICAL WRITING

Networking Series | Systems and Network Fundamentals

Jan 2026

- Published 6 technical articles on networking fundamentals including DNS resolution, TCP/IP internals, and HTTP debugging with cURL.

Git Series | Version Control Internals and Workflows

Jan 2026

- Authored 3-part Git internals series on repository structure, objects, blobs, commits, and version control workflows.

EDUCATION

Bachelor of Technology - Computer Science Engineering (Data Science)

Aug 2024 - Aug 2028

Noida International University

8/10 GPA