



# Hritwik Singhal

Site Reliability Engineer and Linux enthusiast.

- Bangalore, Karnataka, India
- +91 954 8668 234
- [recruiters@thorin.theoakenshield.com](mailto:recruiters@thorin.theoakenshield.com)

**Site Reliability Engineer** with a passion for Python/C++ and **Linux**. I am a **dedicated** and self-driven **geek** with a strong zeal for **open-source development** who is constantly looking to build new systems. I would rather spend 4 hours writing a script to **automate** a task that would take me 40 seconds to do every day.

## Profiles

- [Hritwik](#)
- [Hritwik](#)

## Skills

### Linux

SSH, Systemd, ZFS, RAID, LVM, ZLOG, Virtualization

### Networking

TCP/IP, DNS, DHCP, VLAN, VPN, Firewalls, Nginx, Wireshark

### Hadoop

Hive, NameNode, DataNode, Hue, Zeppelin, Distributed Systems

### IaC

Nix, Terraform, CloudInit, NixOS

### Automation and Scripting Tools

Ansible, Bash, Python, Git, Jenkins, Proxmox

### Orchestration

Kubernetes, Docker, Microservices

### Monitoring

Grafana, Loki, Prometheus, ElasticSearch

### Soft Skills

Communication, Problem-Solving, Collaboration, Flexibility, Critical Thinking, Eager to learn

## Hobbies

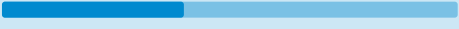
- |                         |                                |
|-------------------------|--------------------------------|
| <b>Homelab</b>          | <b>Reading</b>                 |
| self hosting, de-google | Astronomy, Psychology, Physics |
| <b>Badminton</b>        | <b>Gaming</b>                  |

## Languages

### Python



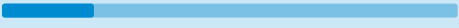
### Bash



### Java



### C/C++



## Experience

### Media.net

Site Reliability Engineer

July 2022 to Present

Bangalore, India

- Proven on call proficiency in debugging live production issues during 24x7 **on-call rotations**.
  - Ensured rapid resolution, minimizing downtimes and enhancing system resilience.
  - Proficiently conducted and authored detailed **RCA** reports.
- Implemented **CI/CD** pipelines on self-managed **Jenkins** slaves.
  - Automated deployment processes of **Conda** virtual environments from custom configuration files within the Hadoop cluster, resulting in a **30% reduction** in deployment time through standardized environment setup.
- Led the company-wide deployment of **Zeppelin** and **Hue** for 1000 developers.
  - Optimized deployment speed, reliability and secret management using **Nix** and **SOPS** through Infrastructure as Code (IaC) methodologies, reducing deployment time by **50%**.
  - Implemented NGINX optimizations, resulting in a reduction of application load times from **~3s to ~500ms**.
- Leveraged **Nix** and **Terraform** to efficiently scale an existing Hadoop cluster on GCP
  - Increased node count from **20 to 70** by revamping monolithic IaC codebase to enhance modularity, inheritance structure, and scalability of individual components, which enabled said scaling with minimal code changes, thus reducing deployment time by **50%**.
- Implemented a streamlined resource pipeline for Hadoop teams, enhancing capacity planning through dynamic data analysis.
  - Integrated automated decision-making systems and analytics dashboards enabling agile response to evolving resource requirements.
  - Optimized cluster settings based on team-specific path size limits, generating granular data for easy reporting and aggregation, thus scaling the cluster by **more than 30%** in capacity.
- Optimized disk read and write latencies from **20ms to sub-millisecond** for **HDFS** and **YARN** applications by tuning operational **ZFS** parameters, thus mitigating more than **80%** frequent latency spikes during operational load.

### Media.net

Site Reliability Engineer Intern

January 2022 to July 2022

Mumbai, India

- Conducted in-depth analysis of Java garbage collection times by scrutinizing server GC logs from a Hadoop cluster executing MapReduce applications. Utilized findings to fine-tune GC parameters, optimize heap size, and enhance cluster performance, ensuring efficient operation.

## Projects

### NebulaCrawler

- Engineered a Kubernetes-driven web scraping architecture for a bespoke search engine. Pods are employed as autonomous crawlers, seamlessly pushing scraped webpage data to Elasticsearch and URL data to Redis.
- Integrated Prometheus exporter SDK to seamlessly export pertinent metrics, including scraped URLs and failures, ensuring robust monitoring and analysis capabilities.

### DiskDoctor

- Developed a robust solution for comprehensive disk status reporting across a 200-node **Proxmox** cluster, encompassing 800 disks including SSDs, HDDs, and NVMeS.
- Leveraged **multithreaded APIs** to ensure high throughput in monitoring disk health and alerting on degradation. Integrated **SSH** access, **Proxmox** API, and **Cloudera** API for seamless monitoring and management of disk infrastructure.

### TerraNixLab

Managed **Proxmox**-based homelab infrastructure with **Terraform**, integrating **Nix** for Infrastructure as Code (IaC) principles Adding capabilities for provisioning of **containers**, **VMs** and **CNAME** entries in **Cloudflare**, through said IaC Codebase.

## Education

LNM Institute of Information Technology, Jaipur

B.Tech in Computer Science

August 2018 to May 2022

## Extra Curricular Activites

### PADI Open Water Scuba Diver

Jan 2024

Qualified to a depth of 18m, can dive anywhere in the world and can assemble and use my scuba gear.

### Solo Travelling

2022 - 2023

Started Solo travelling, exploring places and meeting new people. This vastly broadened my perspective and completely transformed my life.

### Trek to Summit of Mt. Kedarkantha

Jan 2021

12,500 ft at -10C

Summit to peak of Mt. Kedarkantha in Uttarakhand on a 6 day trek.