

# Aakarshit Tyagi

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## Career Summary

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An experienced Site Reliability Engineer with a proven track record in managing high-scale, high-volume financial transaction systems in fintech and telecom. My expertise lies in architecting and maintaining robust infrastructure, with a special focus on database operations and performance. I have led critical projects including the end-to-end setup of new bank infrastructure, major datacenter capacity expansions, and the successful execution of disaster recovery drills for business-critical services. Recognized as a subject matter expert in systems and databases, I have driven research into performance enhancements like Anycast DNS, advanced load balancing and HSM deployment. With a deep passion for Linux, people skills and an entrepreneurial mindset, I am seeking a new challenge in Canada's tech sector where I can contribute to building scalable, resilient infrastructure and continue to learn and grow. At PhonePe, my work was a significant contributor to its valuation increase by 3x to 15 billion USD at IPO next year.

## Work Experience

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### Site Reliability Engineer

August 2021 – August 2025

PhonePe Group (Walmart) – Bangalore, India (Remote)

- Developed least-time algorithm for nginx+ to shape upstream network traffic to banks that improved success rates by 33% and reduced p99 latencies by 90%
- Designed and implemented high-availability and DR for largest banks in India (Yes, Axis and ICICI) for a 15-minute failover of 400 million daily QR-based payments
- Infrastructure Management as code using Ansible for building MariaDB Galera clusters with support for templated configurations, reducing provisioning time by 77%
- Performed database splits and upgrades for sharded-MariaDB (Galera) increasing capacity by 70%
- Developed alerting using Riemann events that monitored latency and errors to improve MTTD
- Benchmarked and deployed stream compression using Zstd to reduce log backup and mariabackup time by 60% with improved network utilization for 40 PB of data per day
- Debugged complex issues: DNS PTR failures (djbdns), Linux Virtual Server healthchecks, online DDL, DB migrations, BGP ECMP routing, synchronous/async replication, keepalived, KVM
- Designed network and access policies for Thales HSMs to secure KYC communication
- Improved SSL transparency alerts by implementing OpenSSL s\_client based monitoring

### Software Engineer – DevOps

August 2020 – July 2021

Airtel X Labs – Gurugram, India (Remote)

- Developed Ansible playbooks integrated with Jenkins CI/CD to manage infrastructure as code
- Extended open-source Hashicorp Vault to add Raft snapshots/restore for a 5-minute RPO
- Deployed local container registry as a cache for Azure to speed up deployments by 98%
- Deployed Gitlab with user lifecycle management and automated backups to OpenZFS
- Developed a webhook API using FastAPI to generate alerts for oncalls via twilio (exotel)
- Built central secret and SSL certificate management using Vault with support for versioning

### Systems Engineer

September 2018 – August 2020

Infosys Limited – Chandigarh, India

- Automated the builds of the Ab Initio Data platform on Hadoop FS leading to a 95% manual effort reduction and infrastructure consistency at Citibank
- Worked on IBM WebSphere, Apache Tomcat, ITSM, Oracle DB, automated patching for Red Hat
- Led Ab Initio Data platform/DB upgrades with zero downtime using A/B schema strategy
- Built HA for Ab Initio's ETL web apps (written in Java – Control Center, M-Hub, Auth Gateway, Express-It) by load balancing towards multiple Apache Tomcat instances

## Certifications, Skills & Projects

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- **Certifications:** CS50x (Harvard.edu), RHCSA (EX200), Oracle Cloud Architect, Cybersecurity Fundamentals (In progress), CompTIA Security+ (In progress)
- **Skills:** Linux (Ubuntu, RHEL), Shell Scripting, Python (+FastAPI), MariaDB Galera (including multi-node operations), Percona Monitoring & Management, Ansible, Saltstack, Containers (Podman, Docker), Nginx+, Traefik, HAProxy, Aerospike, RabbitMQ, Gitlab, Hashicorp (Vault, Consul, Nomad), Networking, BGP, Oracle Cloud, ELK, TIG, Cloudflare CDN, Container orchestration, Postgres, SQL, LibreNMS, VAPT, OpenSCAP, OSSEC, Nessus, SAML, OAuth
- **Projects:** Hugo static site (Personal Blog), Windows CE 6.0 CarPlay project, Self-hosted WireGuard VPN, Email and Pihole DNS, VoIP SIP using voip.ms, RAID NAS, SAN OCFS

## Education

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### Cybersecurity Connections

ACCES Employment – Toronto, Ontario, Canada

**September 2025 – Present**

### Post Graduate Diploma in Business Management

Narsee Monjee Institute of Management Studies – Bangalore, India (Part-Time)

**July 2022 – July 2023**

### Bachelor of Technology

University of Petroleum & Energy Studies – Dehradun, India

**July 2014 – July 2018**