

# Wajahat Razi

DevOps Engineer | Cloud Engineer

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- An **IT Engineer** with an aptitude for **technology & software**, aiming to polish my skills within a dynamic organization, making valuable contributions.
- With **3+** years of experience in **IT**, notably in **SONiC open-source NOS**, **Cloud**, and **DevOps**, I excel in tackling challenging assignments and finding solutions.
- A **creative** individual with **polished problem-solving** skills, who believes in **continuous learning**, capable of learning technologies promptly & thoroughly.
- **Written & verbal communication** skills enable me to **interact effectively** with **foreign clients, peers & stakeholders**.

## Skills

### Analytical Concepts

- Research & Development • Configuration Management • Load Balancing • High Availability • Restful APIs
- Prompt Engineering • Virtualization (Type 1/Type 2 hypervisors) • Cloud Computing • Intent-Based Networking
- Software Defined Networks • Orchestration • Server Management • Switch Abstraction Interface (SAI API)
- CI / CD Pipelines • Containerization • Automation • Infrastructure Provisioning • Monitoring
- High-Level Design • Low-Level Design • Technical Writing • Stakeholder Management • SLA Compliance

### Operating System

- Linux Kernel • Ubuntu • Bridging • Processes & Threads • Sockets • In-Memory • Resource Allocation
- SONiC • Daemons • File System • Mounting • Scheduling • Deadlock • Interprocess Communication

### Computer Networks

- Subnetting • CIDR • Open-vSwitch • OpenFlow • SNMP • VxLAN/VPN • VLANs • HTTP/HTTPS • FTP/SFTP
- DNS • TCP/UDP • DHCP • SSH • ZTP • ARP • IP Addressing • Routing (BGP) • Firewall • TCP/IP • NAT

### Tools

- VMWare ESXi • KVM • Virtual Box • Docker (Files/Volume/Compose/Networks) • Version-control (Git) • GitHub
- AWS Service EC2 • AWS VPC • Redis • GNS3 • Prometheus • Elasticsearch • VSCode • Moba xTerm
- Kubernetes • Ansible (Learning) • Terraform (Learning) • Jenkins (Learning) • GitLab (Learning)
- Python • C/C++ • Bash • Powershell

### Professionalism

- Love sharing knowledge • Active listening • Assignment ownership • Presentation • Open to change
- Effective cross-functional communicator • Approaching problems with solutions

## Career Highlights

- Honored to have authored 03 influential publications focusing on SONiC's microservices-based architecture, contributing to the Linux Foundation for SONiC (Software for Open Networking in the Cloud).
  - [sonicfoundation.dev/demystifying-sonic-its-importance-in-modern-data-centers/](https://sonicfoundation.dev/demystifying-sonic-its-importance-in-modern-data-centers/)
  - [sonicfoundation.dev/deep-dive-into-sonic-architecture-design/](https://sonicfoundation.dev/deep-dive-into-sonic-architecture-design/)
  - [sonicfoundation.dev/becoming-a-contributor-to-sonic/](https://sonicfoundation.dev/becoming-a-contributor-to-sonic/)
- Honored to have received a 100% LiFT Scholarship from the Linux Foundation to take a Certified Kubernetes Administrator course & exam.

## Experience

### xFlow Research Inc

Network Design Engineer II

June 2023 - Present

Understanding SONiC's microservices-based containerized architecture & code, which spans 41 Git repositories, I collaboratively design, develop, and implement cutting-edge features for the Linux Foundation open-source project SONiC, presenting high-level designs in the community. On top, I have developed an understanding of DevOps principles, Linux Kernel, Virtualization, Networks, Docker, Kubernetes, and In-memory databases.

- Designed and contributed to 03 features for SONiC:
  - Multiple Spanning Tree: <https://github.com/sonic-net/SONiC/pull/1298>
  - VLAN Enhancement: <https://github.com/sonic-net/SONiC/pull/912>
  - DHCP DOS Mitigation: <https://github.com/sonic-net/SONiC/pull/1651>
    - Cloned, branched, built, and leveraged DevOps principles like continuous integration and delivery pipelines to push the features into the master branch release.
- Led the deployment of an Intent-Based Network Orchestrator using 02 Virtual Machines (vNetC - a centralized platform for network management that houses the database, web server, and RESTful API & SDLC - connector between topology and the vNetC) and 02 Dell R740 servers utilizing VMWare ESXi & GNS3.
  - Achieved customer satisfaction by successfully delivering the project from Infrastructure provisioning (deployment) to testing of the L3 feature, Route Maps, within 01 month
- Leverage Microsoft Azure CI/CD pipelines to build SONiC images for testing new deployments, by cloning the SONiC build repository with submodules, configuring build environments, and modifying configuration files and container module URLs.
- Led the initial stage of research & design in the development of a SONiC-based network packet broker (NPB) with additional Fabric Orchestration functionalities for a large telecom customer production network. This involves end-to-end development, feature containerization, feature testing, and deployment.

- Designed its fabric architecture, topology, and features like Traffic filtering, Traffic forwarding, Traffic de-duplication, Traffic Aggregation, etc.
- Tested SONiC features with an understanding of underlying protocols for validating the direction of our research & design.
- Carried out research and testing on open-source SDN controllers like ODL (Java), RYU (Python), and Floodlight (Java). Reviewed Git repositories, and evaluated architectures, features, and community support. Performed hands-on deployment tests for these controllers to reach conclusions.
- Configured & tested Inter-VLAN, Intra-VLAN, iBGP, eBGP, VxLAN, ACLs, RouteMaps, STP/MSTP in SONiC
- Enhanced the architectural design of SONiC (under review by Microsoft), automated infrastructure setup, and testbed deployments using Ansible
- Developed an introductory course on SONiC for Microsoft, delivered customer presentations, and created documentation including SOWs, POCs, and PRDs.

### Coca-Cola Beverages Pakistan Limited (CCI)

IT Resident Engineer

January 2023 - July 2023

- Supervised planning and implementation of network automation projects, including Digital Twin and New-production-lines network structuring, supporting the transition towards automated processes.
- Maintained 24/7 network uptime in production areas & warehouses, meeting SLA compliance. Performed fast-paced troubleshooting, documented solutions to prevent recurrence, and managed backup devices to mitigate failures
- Supported the Turkish team in replacing Cisco End-of-Life switches with Cisco 9200 series switches in the core layer of the CCI data center with minimal downtime.
- Utilized ServiceNow for incident and task management, resolving network and IT issues for 500+ users with efficient support receiving appreciation.

### Orange Line Metro Rail Transit Service (CPEC)

IT Resident Engineer

January 2022 - August 2022

Technical Team Lead

September 2020 - May 2021

- Played a pivotal role in the deployment of the Automated Fare Collection System across 26 stations, managing 400+ devices, providing L2 support, ensuring 99% strict SLA Compliance for devices & Network Uptime
- Collaborated closely with Chinese teams and third-party contractors to brace 0.1 - 0.2 million daily ridership, resolving an average of 250 - 300 daily complaints.
- Implemented server management system (NMS) across 26 stations for the server health check to ensure complete data collection for ridership, revenue & performance reports.
- Developed interest in system configuration, performed fast-paced troubleshooting, and upon OS failure utilized Linux to install OS on devices.
- Documented issues & their solutions to prevent recurrence and conducted training sessions for recruits and operational staff every 30 days to keep them updated.

## Courses & Certifications

### DevOps Training | Dice Analytics (Dicecamp) | Instructor-Led | 08 Weeks

Ongoing

- DevOps with practical hands-on practice to achieve proficiency, covering CI/CD, Microservices Architecture, Git, Docker (Architecture & features), Kubernetes, AWS, Terraform, and Ansible.
- The final project integrates all skills learned, involving packing in Docker containers, automating infrastructure on AWS with Terraform, deploying Grafana for monitoring, and establishing a CI/CD pipeline.

### LiFT Scholar | Linux Foundation | Self-Paced

Enrolled

- In June 2024, I received a scholarship from the Linux Foundation, to learn & earn industry-standard certification in Kubernetes (CKA). This certification will play a pivotal role in my development.

## Education

### BS Electrical Engineering | FAST - NUCES, Islamabad

- Final Year Project: Smart Energy Forecasting Device, an IoT-based system predicting future energy consumption (kWh). Independently developed its mobile application from scratch, with no prior experience in mobile app development

## Activities

- Involved in donations, food drives & blood banks.
- Have a fair understanding of Logic building.
- Have interests in Mathematics & Physics.
  - Tutored Mathematics to an FSC student who failed the final examination twice; he passed the next year
  - Tutored Science subjects to Class 05 & 06 Beaconhouse students
- Have been playing Drums & Guitars for a decade, with successful participation in various events.
- Can sketch portraits with a pencil.
- Have played football at the club level in Lahore.
- Qualified for the final round in Fifa'12 at the Punjab Youth Festival, 2012.