

Malakai Kumar

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SUMMARY

Network and automation engineer with four years supporting enterprise and service provider infrastructure across core network lifecycle operations, Python automation, configuration assurance, telemetry analysis, and multi vendor troubleshooting. Builds practical tooling for **device onboarding**, provisioning, validation, **configuration management**, upgrades, migrations, modernization, and device retirement. Applies TCP/IP, subnetting, routing, switching, packet analysis, OSI model fundamentals, BGP, OSPF, IS IS, and EIGRP concepts during production changes and lab validation. Uses Git, CI/CD practices, configuration data, **operational datasets**, **system logs**, and network telemetry to improve release quality and operational visibility. Partners with engineering, operations, architecture, and software teams, documents repeatable procedures, and exercises sound judgment during maintenance windows. Brings a steady focus on reliability, scalability, compliance, service continuity, and practical network improvement.

EXPERIENCE

Network Automation Engineer

July 2024 - Present

Allegheny Fiber Networks

Pittsburgh, PA

- Own automation and lifecycle operations for core routers across a multi vendor production network. Partner with engineering, operations, architecture, and software teams on deployments, upgrades, migrations, compliance, and service continuity.
- Built **Python** onboarding workflows, standardizing router inputs and pre deployment checks across production environments.
 - Created configuration audits, giving operations actionable exception reports before scheduled maintenance windows.
 - Integrated **telemetry**, snapshots, and logs into operational views for routing anomaly investigation and reliability planning.
 - Validated BGP and OSPF changes through **packet analysis** during capacity expansions and hardware refreshes.
 - Maintained Git repositories and **CI/CD** checks, improving review discipline and release repeatability for tooling.
 - Coordinated **migrations** and retirement work, documenting rollback criteria, **validation** steps, and post change results.

Network Operations Engineer

October 2022 - June 2024

Keystone Communications Services

Harrisburg, PA

- Supported routing and switching infrastructure serving regional enterprise and carrier connectivity. Combined Python scripting, packet analysis, lifecycle testing, and documentation with careful production support across upgrades, migrations, and configuration deployments.
- Supported **provisioning** and monitoring for routing and switching infrastructure serving enterprise **connectivity** customers.
 - Developed Python parsers for **configurations** and logs, reducing manual comparison during upgrade preparation.
 - Investigated **TCP/IP**, subnetting, and packet flow issues through **operational datasets** and packet analysis.
 - Validated BGP, OSPF, **IS IS**, and EIGRP concepts across production and lab change plans.
 - Executed pre change and post change testing for refreshes and configuration deployments.
 - Maintained diagrams, procedures, change records, and standards for consistent engineering shift handoffs.

PROJECTS

Network Lifecycle Validation Platform 📅 2024

Created a Python based validation workflow for configuration inputs, device state, telemetry, and deployment checks. The work supported safer onboarding, upgrades, migrations, compliance reviews, and retirement decisions across multi vendor network infrastructure.

Routing Telemetry Analysis Lab 📅 2023

Built a lab workflow for examining routing data, system logs, packet captures, and configuration snapshots. Results supported anomaly identification, troubleshooting practice, route validation, and clearer recommendations for network performance improvements.

LEADERSHIP & AWARDS

- Recognized by network operations leadership for dependable automation support during major maintenance windows.
- Received team recognition for clear migration documentation and practical troubleshooting during infrastructure refreshes.
- Led peer knowledge sharing on Python tooling, configuration validation, and packet analysis fundamentals.

EDUCATION

Bachelor of Science in Information Technology

2022

Robert Morris University GPA: 4.0

Pittsburgh, PA

Coursework: Network engineering, Python programming, database systems, information security

CERTIFICATIONS

- Cisco Certified Network Associate 📅 2023
- Python Institute Certified Entry Level Python Programmer 📅 2024

TECHNICAL SKILLS

- **Programming and Scripting:** Python, scripting, regular expressions
- **Network Protocols:** TCP/IP, BGP, OSPF
- **Routing Technologies:** IS IS, EIGRP, subnetting
- **Network Infrastructure:** Routers, switches, multi vendor networks
- **Configuration Management:** Device configurations, standards, configuration snapshots
- **Telemetry and Logging:** Network telemetry, system logs, operational datasets
- **Packet Analysis:** Packet captures, packet analysis, connectivity analysis
- **Version Control:** Git, branching, code review
- **Delivery Practices:** CI/CD, release management, deployment assurance
- **Testing Environments:** Network simulation, lab validation, pre change testing
- **Lifecycle Operations:** Provisioning, upgrades, migrations, device retirement
- **Network Engineering:** Routing, switching, capacity expansion, modernization

SKILLS

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|----------------------|-------------|-------------------|----------------------------|
| • Python | • Routing | • IS IS | • Configuration Management |
| • Network Automation | • Switching | • EIGRP Concepts | • Network Telemetry |
| • TCP/IP | • BGP | • Packet Analysis | • Git |
| • Subnetting | • OSPF | • OSI Model | |

PROFESSIONAL AFFILIATIONS

- Member, Association for Computing Machinery, Pittsburgh professional community.
- Participant, Cisco networking and automation learning community.

LANGUAGES

- English (Native)
- Spanish (Intermediate)

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST