

ARAVINDH GOUTHAM MAHENDRAN

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University of Colorado Boulder

Aug 2024 – Present

Master of Science in Network Engineering, GPA: 3.767/4

Boulder, USA

Sri Venkateshwara college of Engineering, Anna University

Aug 2020 – Apr 2024

B.E in Electronics and Communication Engineering

Chennai, IN

Relevant Coursework

- Enterprise Networks
- Linux Administration
- Network Automation
- Industrial IOT
- Machine Learning
- Computer Networks

Technical Skills

Network Automation Tools: Napalm, Netmiko, Python, GIT, Flask, Jenkins

Concepts/ Protocols : TCP/IP, IPv4, IPv6, ARP, ICMP, STP, DNS, DHCP, NAT, RIP, OSPF, SNMP, MPLS

Technologies/Frameworks: Linux, Wireshark, Cisco Packet Tracer, GNS3, vSphere, VMware

Projects

Network Automation using Ansible and Jinja2 | *Network Automation*

March 2025

- Automated multi-router configuration using Ansible playbooks and Jinja2 templates based on topology and CSV input.
- Generated device-specific configurations dynamically and deployed them using Python scripting and the Ansible “Roles” directory structure.
- Configured Cisco routers in GNS3 with reachability verification using Netmiko.

Enterprise MPLS Implementation | *Networking (Hands-on with Cisco IOS device)*

April 2025

- Configured OSPF within ISP core and enabled LDP for label distribution.
- Implemented Policy-Based Routing to control traffic paths across MPLS backbone.
- Designed MPLS-TE tunnels with RSVP-TE, including CSPF-based primary and backup paths.
- Verified label operations (Push, Swap, Pop) and tunnel failover using CLI and traceroute.
- Worked with LIB, LFIB, and TE components like TED, PATH/RSVP signaling.

Network Management Web Interface | *Network Automation, Python*

February 2025

- Built a web-based network automation tool using Flask and NAPALM for dynamic router configuration.
- Automated OSPF setup: Users input OSPF details via the UI, and NAPALM configures routers automatically.
- Config Management: Fetches the latest router configurations via SSH and compares them with saved versions, highlighting differences in the web UI.
- Designed an intuitive frontend for real-time network management.

Enterprise Network Configurations & Analysis | *Networking (Hands-on with Cisco IOS device)*

January 2025

- Configured VLANs, trunking, inter-VLAN routing, and VTP Server for efficient network segmentation and management.
- Implemented STP, RSTP, EtherChannel, and PortFast to enhance network stability, redundancy, and performance.
- Performed packet capture and analysis using SPAN on physical Cisco routers and switches for troubleshooting and monitoring.

CI/CD Pipeline Automation for Network Configuration using Jenkins | *Network Automation*

March 2025

- Implemented a CI/CD pipeline using Jenkins for automated network configuration and deployment using Infrastructure-as-Code (IaC).
- Configured Jenkins integration with GitHub, enabling webhook-triggered builds on code push events.
- Scheduled nightly Jenkins jobs to ensure regular testing and early bug detection in network scripts.
- Deployed the project in a virtual lab environment connected to GNS3 routers and validated real-time network changes using automation.

Linux System Administration Projects | *Bash, vSphere, VS Code*

August 2024

- Managed Linux systems (Red Hat, Debian, FreeBSD) in virtual environments, using Bash scripts for uptime, CPU, RAM, and swap monitoring.
- Automated employee login creation with unique usernames, UIDs, GIDs, and role-based access via secondary groups.
- Configured multi-site Apache with virtual hosts for secure domain separation in DMZ.
- Standardized server configurations and user permissions using Ansible for consistent updates.
- Enforced PAM-based access controls and password policies to secure systems.
- Expanded storage using LVM and RAID, implemented quotas, and set up automated backups for high availability.
- Configured ISC DHCP and BIND DNS with split-DNS for LAN and DMZ management.