

Jimmy Pentz

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PROFESSIONAL SUMMARY

M.S. Network Engineering student gaining hands-on experience building and managing networked systems. Experienced in configuring and troubleshooting network infrastructure in lab environments, with growing expertise in routing, switching, and network design.

SKILLS

Networking & Protocols: ARP, STP, TCP/IP, UDP, IPv4/IPv6, OSPF, DNS, DHCP, NAT, VLANs

Systems & Tools: Linux (Debian, RedHat), Bash, Git, SSH, Wireshark

Programming: Python, C, Javascript/TypeScript

CI/CD & Automation: GitLab CI, GitHub Actions

EXPERIENCE

Embedded Software Engineer

Aug. 2018 – Dec. 2025

FIRST RF Corporation

Boulder, CO

- Automated MikroTik switch deployment with a Python script that configured port-based DHCP assignments, ensuring consistent testbed setups; deployed across 10 lab switches used by all engineers.
- Developed and maintained Ethernet-based UDP communication interfaces in Python and C to enable packet-based messaging between distributed RF devices; integrated auto-generated API documentation for streamlined integration
- Designed and implemented a user-friendly UI/UX interface for a radio mesh network web GUI using React and Typescript, with a Python back end (FastAPI), and deployed it on 10 radios with Ansible
- Redesigned an internal antenna plotting tool to address limited features and slow performance. Trying to open-source the development of the new web-based version. Utilized React and TypeScript for the front end and Python for the back end
- Utilized GitLab CI/CD tools to implement semantic versioning, unit testing, linting, and artifact generation

EDUCATION

University of Colorado

Boulder, CO

Master of Science in Network Engineering

Expected Spring 2027

University of Colorado

Boulder, CO

Bachelor of Science in Electrical Engineering

Aug. 2011 – Dec. 2015

PROJECTS

Linux System Administration

- Configured and managed a network of 7 VMs (Debian and Red Hat) with ISP, DMZ, and internal segments, routing all traffic via a gateway machine
- Deployed VMs as router, file server, DNS/backup DNS, web/backup web server, and experimental FreeBSD node
- Applied Linux administration skills: bash scripting, user/access management, PAM, web servers, DHCP, DNS, NFS/NTP, firewalls, storage, and configuration management

Network Engineering

- Configured Cisco 2960 switches and 3750 routers via console and access server; secured devices with encrypted passwords and enabled SSH/Telnet for remote management
- Designed and implemented multi-VLAN networks with VTP server, inter-VLAN routing (ROAS), EtherChannels, and STP/RSTP convergence
- Applied IP subnetting across multiple routers/switches; implemented static routing, then migrated to RIP and EIGRP with metric tuning for dynamic routing
- Configured multi-area OSPF with route summarization, redistributed routes between RIP and EIGRP into OSPF, and implemented Virtual Routing and Forwarding (VRF) instances
- Deployed static and dynamic NAT, PAT, ACLs, and HSRP to interconnect and secure multiple network segments