

# 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