

Jimmy Pentz

720-546-6353 | jpentz1@gmail.com | linkedin.com/in/jimmypentz | <https://jimmys.place>

PROFESSIONAL SUMMARY

M.S. Network Engineering student with an embedded systems background focused on network automation, NetDevOps, programmability, and scalable network operations. Hands-on experience with routing, switching, and Python-driven automation through academic projects and lab environments.

SKILLS

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

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

Programming: Python, C, Javascript/TypeScript

Network Automation & DevOps: Ansible, Netmiko, NAPALM, Jinja2, SNMP, GitLab/GitHub (CI/CD)

EXPERIENCE

Embedded Software Engineer

Aug. 2018 – Dec. 2025

FIRST RF Corporation

Boulder, CO

- Developed Python-based automated test frameworks using parameterized workflows to provision devices, capture telemetry, run validation tests, and generate structured reports
- Built web-based monitoring and configuration GUIs for device management workflows and integrated automated deployment of these apps into infrastructure builds using Ansible
- Implemented GitLab CI/CD pipelines supporting semantic versioning, automated testing, linting, and artifact publishing to standardize software delivery across networked systems

EDUCATION

M.S. in Network Engineering - University of Colorado Boulder, May 2027 (GPA 4.0)

B.S. in Electrical Engineering - University of Colorado Boulder, Dec. 2015

PROJECTS

Network Automation

- Collected network device state using management protocols and active scanning to identify running services, exposed ports, and potential security risks
- Developed Python scripts to generate custom packets, gaining hands-on understanding of protocol fields, headers, and packet flow
- Automated the deployment of iBGP peering between routers using configuration-driven scripts, including credential handling and automated verification of peering state and connectivity
- Developed a Flask-based network automation application enabling device configuration retrieval, automated OSPF deployment, configuration diff analysis, and simulated load-balanced connection migrations without traffic disruption

Network Engineering

- Hands-on experience with Cisco switches and routers, implementing layer 2/layer 3 protocols and packet analysis
- 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 routing protocols, using metric tuning for dynamic routing
- Configured multi-area OSPF with route summarization and route redistribution, and implemented Virtual Routing and Forwarding (VRF) instances
- Deployed static and dynamic NAT, PAT, ACLs, and HSRP to interconnect and secure multiple network segments

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