Dheeraj Gajula

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Education

University of Colorado – Boulder — Boulder, CO
Master's in Computer Science — Network Engineering — *Aug 2025 – May 2027*
- **Coursework**: Enterprise Networks, Network Systems, Machine Learning

Dayanada Sagar College of Engineering — Bangalore, India
Bachelor's in Computer Science and Engineering | 3.76/4.0 — *Nov 2020 – May 2024*
- **Coursework**: Data structures and algorithms, Database systems, Operating systems, Computer Networks, Cloud Computing, Automata Theory, Software Engineering, Machine Learning, Deep Learning, NLP, Computer Vision

Experience

Software Engineer – 1 — June 2024 – Aug 2025
Versa Networks — *Bangalore, India*
- Developed REST APIs in **GoLang** and **Cassandra** that is serving more than 3000 reqs/s reported metrics through **Prometheus** and built dashboards through **Grafana**
- Performed **Quantitative and Qualitative analysis** of virus total malicious feed data by building multiple data pipelines using **Python** and **BigQuery** and built a **Mathematical Reinforcement model** to predict the result
- Containerized multiple services using **Docker** and **Kubernetes** and deployed them in **GCP**

Software Engineer – Intern — Feb 2024 – June 2024
Versa Networks — *Bangalore, India*
- Automated the device usage tracking at versa networks, reduced the time of billing from 7 days to under an hour
- Analyzed inconsistent logs, built systems to **detect anomalies**, and **StateMachines** to track device states
- Used **MongoDB and Python Data modelling** to process hierarchical data of the director logs and provided insights about the usage on **prometheus and Grafana**
- Used **Flask** and **FastAPI** for making it as a service, **Docker** and **Docker compose** for deploying it on servers

Projects

Enterprise Network Lab | *STP, DHCP, EIGRP, RIP, Wireshark, Wireless, VLANs* — Sept 2025 – Present
- Built fault-tolerant Cisco enterprise networks with VLANs, trunking, STP/RSTP, and HSRP for redundancy
- Configured wireless LANs, DHCP, NAT/PAT, and inter-VLAN routing for Internet and internal connectivity
- Implemented RIP, EIGRP, and OSPF multi-area routing with redistribution and convergence tuning
- Validated network behavior using Wireshark, ping/trace, and IOS tools for routing and failover

Advanced Enterprise Networks | *OSPF, RSVP-TE, MPLS, IPsec, NAT, IPv6* — Fall 2025
- Designed multi-site enterprise and ISP-style networks with MPLS, RSVP-TE tunnels, and bandwidth guarantees
- Integrated IPv4/IPv6 connectivity with IPsec-encrypted tunnels, OSPFv2/v3 routing, and DHCP/DHCPv6 services
- Configured NAT, Stateful NAT, and NAT-PT for Internet access and IPv4–IPv6 translation
- Ensured fault tolerance, redundancy, and secure communication across multiple sites

Network Applications | *C++, network programming* — Sept 2025 – Present
- Built a multi-threaded **TCP/UDP HTTP Web Server** and **HTTP caching proxy** in **C/C++** with request parsing, hostname validation, status code handling, and **UDP file transfer protocol**
- Implemented **persistent connections with pipelining** and **MD5 hash-based page caching** with timeout expiration; integrated **Stop-and-Wait** and **Go-Back-N** protocols for reliable UDP transfers
- Enabled **concurrent request processing** via threading/forking with dual socket management for multi-client support and graceful error handling
- Integrated **blocklist filtering**, background link prefetching, and designed a **secure chat system** with key-exchange authentication, PostgreSQL for user management, and SQLite for messages
- Developed a **Distributed File System (DFS)** in C with client/server architecture: implemented file chunking, MD5-based placement, redundancy across multiple servers, and commands (`list`, `get`, `put`) for reliable storage and retrieval

Home Lab | *Linux system Admin, virtualisation, cloudflare, docker, docker compose, wireguard* — Sept 2025 – Present
- **https://index.dheerajg.me** I have a small home lab where I host multiple services, I use wireguard to access them from anywhere, and for some of them I use docker, and I always have 2 copies of backups

Technical Skills

Concepts and protocols : TCP/IP, IPv4, IPv6, ARP, ICMP, STP, DNS, DHCP, NAT, RIP, OSPF, SNMP, MPLS, GNS3
Languages: GoLang, Python, C/C++, SQL (Postgres), Bash
Frameworks and Database: Flask, FastAPI, Postgres, BigQuery, Cassandra, MongoDB, Prometheus, FireBase
Developer Tools: Git, Docker, Kubernetes, Google Cloud Platform, Grafana, AWS, NGINX