

Ayush Mishra

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SUMMARY

MS Computer Science student at CU Boulder with hands-on networking experience; 3+ years as Software Engineer building scalable APIs and network applications in C/Python. Eager to apply hands-on enterprise knowledge and troubleshooting skills to innovative networking and cybersecurity roles driving real-world impact.

EDUCATION

University of Colorado-Boulder May 2026
MS, Computer Science, 3.9/4.0 GPA Boulder, CO
Relevant Course Work: Enterprise Networks, Network Systems, Network Management, IP Routing and Protocols, Network Analysis and modelling

University of Nebraska-Lincoln May 2021
BS, Computer Science, 3.5/4.0 GPA Lincoln, NE

SKILLS & INTERESTS

- **Computer Languages & Tools:** C++; Python; Cisco IOS; JS (ReactJs, VueJs, AngularJS); SQL; MongoDB; AWS; Docker; Linux; Laravel;
- **Networking Concepts and Technologies:** IPv4/IPv6; TCP/IP; ARP; DNS; STP; RIP, EIGRP; OSPF; Troubleshoot using Wireshark; Wi-Fi; MPLS; IPsec;
- **Tools & Platforms:** Cisco IOS; Wireshark; GNS3; Cisco Packet Tracer;

NETWORKING & SYSTEM PROJECTS

Enterprise Networks and Network System Fall 2025

- Configured an ISP-style **MPLS** core with **OSPF**, **LDP** for label distribution, and **MPLS-TE** tunnels using **RSVP-TE** and **CSPF**, including primary/backup paths.
- Implemented Policy-Based Routing to steer traffic along engineered paths and enforce routing policies beyond standard IP forwarding. Also implemented routing protocols like **OSPF**, **EIGRP**, **RIP** on topologies.
- Designed campus-style Layer 2/3 switching with **VLANs**, trunking, inter-VLAN routing, and VTP, and enhanced resiliency using **STP/RSTP**, EtherChannel, PortFast, plus SPAN-based packet captures for troubleshooting on physical Cisco gear.

Network System Fall 2025

- Developed multiple network applications in C, including a **UPD-based FTP** style client/server and a concurrent **TCP HTTP** web server capable of handling multiple simultaneous requests.
- Built advanced networking services in C such as an **HTTP caching** and **reverse proxy** and a distributed file system that shards files across multiple servers to provide redundancy.

WORK EXPERIENCE

Cisco (Capstone) Sep 2025 - Pres.
Software Engineer Boulder, CO

- Working on a LLM-Driven Intent Based configuration for Cisco Routers to optimize workflow of Network Engineers of all expertise.

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| VTM Group <i>Software Engineer</i> | May 2023 - Aug 2024 Beaverton, OR |
| ▪ Automated data collection and other testing procedures for various standards clients (HDMI, USB, VESA, PCI-SIG), tools built are actively used in testing events around the world. | |
| ▪ Designed multiple Databases and implemented full stack applications using Laravel Framework for standards. | |

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| Novus Labs <i>Software Developer</i> | Oct 2021 – Apr 2023 Hillsboro, OR |
| ▪ Built scalable API, architecting backend for Web/IoT Applications using N5 sensors, also implemented source-to-source code transformation using clang-LibTooling(C++) for Robot Operating System. | |
| ▪ Writing firmware for an HID device to empower visually impaired individuals with an easy to incorporate screen reading braille device. | |

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| Tokn Inc. (Startup) <i>Software Developer (Backend)</i> | May 2021 - Jan 2022 Remote |
| ▪ Architected the backend with a NoSQL database, and managed/developed the API. Also helped out with the frontend written in React.js | |
| ▪ The role required constant communication with the Cloud Architect, backend, and blockchain teams. While providing valuable inputs for the vision of the company during regular sprint and scrum meetings. Managing MVP product rollout for investment seeding rounds. | |

TEACHING, LEADERSHIP and VOLUNTEER EXPERIENCE

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| Computer Science Department, CU Boulder | Aug 2024 – Pres. |
| <i>Course Manager(Spr 2025), Grader (Fall 2024, Fall 2025, Spring 2026) (Linear Algebra CSCI 2820)</i> | <i>Boulder, CO</i> |
| <i>Grader (Summer 2025) (Design and Analysis of Algorithms CSCI 3104)</i> | |
| ▪ Responsible for Grading and providing feedback on students assignments, homeworks and quizzes. Also host office hours to answer any questions regarding the coursework. | |

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| Department of Computer Science, UNL | Jan 2019 – May 2020 |
| <i>Teaching Assistant (Data Structures and Algorithm and Intro to Discrete Structures)</i> | <i>Lincoln, NE</i> |
| ▪ Help students with any questions on coursework, homework, or coding assignments. Also, helped GTA's with hosting recitation courses. | |
| ▪ Outstanding Undergraduate Teaching Assistant 2019 - 2020 (Link) | |

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| Initialize | Jan 2018 – Dec 2019 |
| <i>Primary Programmer (Vice-President)</i> | <i>Lincoln, NE</i> |
| ▪ Managed multiple initiatives of the student club ranging from hosting NCPA camps, to managing Robotics club with other leaders of the club. Helped reach out to hundreds of Title-1 elementary and middle schools in and around Nebraska. | |
| ▪ Volunteered at the club with the robotics program at Initialize. Worked with multiple Title-1 elementary schools in Nebraska guiding students on EV3 robots while helping with basic concepts of logical thinking. | |

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| Department of Computer Science, UNL | May 2018 – Jan 2019 |
| <i>(Undergraduate Researcher (UCARE))</i> | <i>Lincoln, NE</i> |
| ▪ I researched on the topic of “Identifying Security Vulnerabilities Among Internet of Things Smart Speakers” where I was primarily just reading research papers and attending meetings. | |
| ▪ Also, helped with basic lab setup every now and then, the summer research opportunity was later extended through the next semester. | |