PALAK GUPTA

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EDUCATION

Northeastern University, Boston, MA

Khoury College of Computer Sciences   **September 2024 - Present**

Candidate for Master of Science in Cybersecurity   Expected   Graduation: December

2026 **Related Courses:** Cybersecurity: TTD, Cyberlaw, Information system forensics, Cybersecurity practices and principles

Birla Institute of Technology, Mesra, India   **September 2019 - May 2023**

Bachelor of Technology in Electrical and Electronics Engineering

Minor in Computer Science

TECHNICAL SKILLS

Programming Languages:	Python, C++, SQL, Bash Scripting
Frameworks/Technologies:	OpenSSL, GPG, MATLAB, MySQL,DLP tools (basic familiarity)
Environment and Tools:	Kali linux, Windows, MacOS, Iptables, Ubuntu Wireshark, Docker, GitHub,Forensic tools
Security Concepts :	Incident Response, Packet analysis, SIEM concepts,Encryption,Networking(TCP/IP, DNS), IDS/IPS
Certification:	Google Professional Cybersecurity, ISC2 Certified in Cybersecurity(CC)

PROFESSIONAL EXPERIENCE

Teaching Assistant – CS 5700/4700: Networking Fundamentals, Northeastern University   **Present**

- Supported students in understanding network layers, IP routing, and Linux-based network tools.
- Collaborated with a team to debug lab infrastructure and teach best practices in secure networking.
- Strengthened communication skills through regular office hours and TA meetings

Operational Lead, Bitosa Global, New Delhi, India   **April 2023 - May 2024**

- Trained and made team members aware of cybersecurity best practices, such as secure file sharing and phishing detection.
- Coordinated with diverse teams to achieve organizational goals, strengthening leadership and communication skill

ACADEMIC PROJECTS

Secure File Transfer System using libsodium and TCP Sockets   **May 2025**

- Built a client-server file transfer system using TCP sockets in C.
- Secured file transmission using authenticated encryption (AEAD) with libsodium's ChaCha20-Poly1305.
- Encrypted files before sending and verified integrity after receiving using nonce and tag validation

Security Event Monitoring Using SIEM (Splunk)   **April 2025**

- Configured Splunk to monitor Windows logs and detect brute-force and PowerShell-based attacks.
- Built dashboards and alerts mapped to MITRE ATT&CK techniques like privilege escalation and persistence.
- Conducted threat hunts by analyzing anomalies and enhancing real-time incident detection.

Network Secure Proxy Configuration | iptables, tcpdump, bind9, rsyslog   **March 2025**

- Configured a Linux VM as a secure gateway for a Windows VM using NAT, IP forwarding, and static routing..
- Applied firewall rules with iptables to restrict traffic to SSH, DNS, and HTTPS; implemented rate limiting and ICMP filtering.
- Set up DNS caching with bind9 and logged dropped packets using rsyslog; validated traffic flow via tcpdump

Wireshark Packet Analysis | PCAP Forensics, HTTP/HTTPS Filters, Display Customization   **March 2025**

- Analyzed PCAP data using Wireshark to investigate potential torrent activity within a 10.0.0.0/24 network.
- Customized Wireshark columns to extract HTTP hosts, HTTPS server names, and port-level insights for forensic clarity.
- Identified user behavior, torrent files, and host OS details, demonstrating network forensic and packet inspection proficiency.

PUBLICATION

Palak Gupta, Rohan Verma, Deepak Verma, & Prashant Singh Rathore, *Building a Stronger Grid: How Blockchain Can Improve Smart Grid Resilience.* Presented at the 2023 IEEE Renewable Energy and Sustainable E-Mobility Conference.

VOLUNTEER

Community Servings, Boston, MA   Fall 2024

- Assisted in meal preparation and distribution for individuals facing critical illnesses, enhancing service efficiency.