Manvir Singh

manvirbalap498@gmail.com | +91 9079945732
github.com/manvirsingh01 | linkedin.com/manvirsingh01 | manvirsingh.in

Skills

Languages: C/C++, Java, Python, JavaScript, MongoDB , SQL, Kotlin
Technologies & Tools: AWS, EC2, S3, Linux, Web Development, Android Development

Work Experience

IIT Jodhpur , Jodhpur May 2025 - June 2025 ***Quantum Computing***

- Developed Python-based simulation and analysis tools for Quantum Key Distribution (QKD), specifically implementing and evaluating two experimental protocols: PPKT(P) and SPDC.
- Designed and built programmable models used by PhD researchers at IIT to identify optimal parameter values in QKD experiments, significantly enhancing experimental validation accuracy and efficiency.
- Contributed to the security analysis of QKD research through algorithmic evaluation and data-driven experimentation using Python. Created a tool for Elliptic Curve Cryptography (ECC) to encrypt and decrypt hash-based data, facilitating secure conversion between ciphertext and plaintext.
- Implemented robust end-to-end encryption and decryption logic to strengthen cryptographic workflows, with a strong emphasis on correctness, security, and practical usability.

National Forensic Sciences University (INI, MHA) , Gandhi Nager July 2025 ***IT and OT Security***

- Trained in IT and OT security, conducting attack simulations on traffic light control systems and power grid environments, with hands-on capture, recording, and analysis of attack traffic.
- Gained practical understanding of IT–OT synchronization, analyzing how coordinated systems operate and how cyberattacks impact critical infrastructure. Participated in team-based Capture The Flag (CTF) challenges, achieving 2nd rank, demonstrating strong analytical and defensive security skills.
- Performed malware attack simulations and learned effective techniques for malware analysis, incident response, and system recovery.

Education

- **National Forensic Sciences University, Dharwad (INI, MHA)** Aug 2023 - Present BTech - MTech. in Computer Science and Engineering (Cyber security) ***CGPA: 7.96/10*** Relevant Coursework: Object Oriented Programming, Databases, Discrete Maths, Data Structures and Algorithms, Oper ating Systems, Computer Networks, Machine Learning, Data Mining, Advance Data Structures and Algorithms, Information Retrieval, Image Processing

Project Work

- **Khishan Saathi (2026) Link:** Developed a web-based agricultural ecosystem, Kishan Saathi, to streamline farmer-market interactions. Implemented a dynamic recommendation engine for crop selection using custom filtering algorithms and It helps farmers analyze climatic conditions and provides early alerts. Java script, Reactjs ,SQL .
- **Snowbytes link (2025):** Developed a unified web portal for cybersecurity tools, featuring network analysis, threat intelligence, and privacy utilities. Implemented PCAP parsing and live traffic capture for packet and protocol inspection. Integrated VirusTotal APIs for reputation checks (file, URL, IP, domain). Built disposable privacy services and an in-browser terminal for secure system access, utilizing Node.js, socket.io, and system utilities for real-time analysis.
- **natcat (2025):** Applied an interactive, browser-based learning platform to demonstrate Netcat commands and core networking concepts through a simulated Linux terminal environment. Implemented a virtual file system and networking tool simulations to enable safe, hands-on practice without real network exposure. Integrated a Netcat cheatsheet and security-focused lessons with a modern, responsive UI using Next.js and Tailwind CSS.