

# SURAJ UPADHYAY

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[Portfolio: suraj-upadhyay-portfolio.netlify.app](https://suraj-upadhyay-portfolio.netlify.app)

[GitHub: github.com/surajup5756](https://github.com/surajup5756)

## SUMMARY

Full-stack developer with hands-on experience in backend development using Java and Spring Boot (REST APIs, Spring Data JPA, encryption, transactional logic) and frontend development using React JS, HTML5, CSS3, and JavaScript. BCA graduate (CGPA 8.85/10) and MCA student at D. Y. Patil University, Pune. Over a year of teaching programming and IT concepts to 100+ students. Seeking an entry-level Full-Stack, Backend, or Software Engineer role.

## SKILLS

- **Programming Languages:** Java, C++, C, JavaScript
- **Backend / Frameworks:** Spring Boot, Spring Data JPA, REST APIs, Maven, JUnit
- **Web Technologies:** React JS, HTML5, CSS3, JavaScript (DOM manipulation, form validation), Responsive Web Design
- **Core CS Concepts:** Data Structures & Algorithms, DBMS, SQL, SDLC, Computer Networking
- **Databases:** MySQL, SQL (queries, joins, basic schema design)
- **Tools:** Git, GitHub, VS Code, MS Office
- **Soft Skills:** Problem Solving, Teamwork, Communication, Teaching & Mentoring

## PROJECTS

### UPI Offline Mesh: Offline Payment Settlement System

Java 17, Spring Boot, Spring Data JPA, RSA-OAEP, AES-GCM, JUnit, Maven

[github.com/surajup5756/UPI-Without-Internet](https://github.com/surajup5756/UPI-Without-Internet)

- Built a Spring Boot backend for offline UPI-style payments where encrypted packets hop device-to-device over a mesh network and settle once a bridge device regains internet.
- Secured payments with hybrid RSA-OAEP and AES-256-GCM encryption; tampered or replayed packets are rejected before reaching the ledger.
- Ensured exactly-once settlement using SHA-256 idempotency and optimistic locking, verified by a concurrency test with 3 threads delivering the same packet.

### Packet Analyzer & Deep Packet Inspection (DPI)

Java 17

[github.com/surajup5756/Deep-Packet-Inspection](https://github.com/surajup5756/Deep-Packet-Inspection)

- Built a Java 17 DPI tool that parses PCAP files and Ethernet, IPv4, TCP, and UDP headers, using only standard Java APIs.
- Identifies applications from TLS SNI and HTTP Host headers, tracks flows by five-tuple, and classifies 16+ services such as YouTube, Netflix, and GitHub.
- Implemented rule-based blocking by IP, port, application, or wildcard domain, and writes filtered PCAP output.

### College Admission Management Website

React JS, CSS, JavaScript

[abc-collegeitandmanagement.netlify.app](https://abc-collegeitandmanagement.netlify.app)

- Designed and developed a multi-page admission portal (Home, About, Admission, Contact) with responsive layouts using React JS components and client-side form validation.

## EXPERIENCE

### Computer Science Mentor

APCS College of IT & Management, Machhlishahr, Jaunpur

Mar 2024 – Present

- Instruct 100+ students across 4 batches in Computer Fundamentals, MS Office, Internet Applications, DBMS, SDLC, Web Development, and Computer Networking through structured classroom sessions.
- Taught C, C++, and Java fundamentals to 100+ students, building strong problem-solving and coding foundations.
- Managed the computer lab for 6 months, overseeing system upkeep, software installation, and troubleshooting to ensure a smooth hands-on learning environment.
- Break down complex technical topics into simple, practical explanations, improving student understanding, engagement, and academic performance.

## EDUCATION

### Master of Computer Applications (MCA), Pursuing

D. Y. Patil University, Pune

### Bachelor of Computer Applications (BCA), CGPA 8.85/10, 2026

Veer Bahadur Singh Purvanchal University

### Intermediate (12th), UP Board, 70%, 2023

### High School (10th), UP Board, 85%, 2021

## LANGUAGES

Hindi (Native), English (Professional Working Proficiency)