AKSHAT NATHANI

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Education

Bachelor of Technology in Computer Science & Engineering | **August 2023 - Present**
Thapar Institute of Engineering and Technology | *Patiala, Punjab*

Professional Experience

Summer Intern | **May 2025 – July 2025**
Thapar Institute of Engineering and Technology | *Patiala, Punjab*
- Designed RFID Antenna using PTFE & Rogers material substrate in CST at 866 MHz, achieving S11 of -0.461 dB with Alien Higgs - 4 RFID Chip ($Z = 20.5 - j191\Omega$)
- Performed impedance matching with the complex chip impedance, using parametric tuning to meet conjugate matching condition.
- Generated 1,000+ parametric simulations by sweeping patch dimensions; trained MLP model (loss : 0.19, accuracy: 81%) to automate matching and reduce manual tuning by 40%.

Project Trainee | **August 2024 – April 20025**
Indian Army EME Unit | *Patiala, Punjab*
- Building RRCC software for real-time resource tracking in Command Centers to enhance operational efficiency and decision-making.
- Architecting a Pub-Sub system enabling multi-operator communication and visualization of mission-critical data.
- Developing RESTful APIs in PHP to support modular functionality and improve response times under high-load conditions.

Web Development Intern | **April 2024 – July 2024**
Evex Fitness | *Hybrid*
- Developed responsive interfaces in React.js, improving cross-platform usability and user retention.
- Integrated Flask-based REST APIs for seamless frontend-backend communication, optimizing load times and performance.

Technical Projects

Events Portal for Technical Societies | *React.js, Node.js, Express, MongoDB* | Link — **February 2025**
- Spearheaded the creation of a unified platform to manage 50+ events across 10+ technical societies at TIET with features for registration, scheduling, and documentation.
- Built an admin dashboard with role-based access and approval pipelines for the Dean of Student Affairs, streamlining event oversight.
- Visualized key metrics using Chart.js and MongoDB aggregations to monitor participant turnout and departmental engagement trends.

Food Festival Website | *React.js, Node.js, Express, MongoDB* | Link — **March 2025**
- Built responsive beach-themed 3D platform using React, achieving cross-device compatibility from desktop to mobile.
- Developed integrated registration platform with Google Forms API and local storage, handling 1000+ user registrations with 100% form validation accuracy and real-time error handling.
- Implemented responsive gallery system with modal displays and Cloudinary CDN integration, optimizing load times by 60% while supporting 200+ media assets across multiple folder structures.

Linky (Open-Source) | *React, Golang, Redis, Docker* | Link — **April 2024**
- Enhanced an open-source URL shortener with custom redirect support, handling over 1,000+ active links and enabling real-time analytics.
- Secured frontend routes using Redux and implemented role-based access control to reduce misuse by 70%.
- Optimized service performance through Redis caching and Dockerized Golang microservices for concurrent traffic handling.

MLSC TIET Website | *JavaScript, React, GSAP* | Link — **February 2024**
- Launched the official chapter website to showcase teams, events, blogs, and contact channels for a 1,000+ member community.
- Crafted interactive scroll-based animations using GSAP, increasing user engagement and average session duration by 30%.
- Implemented responsive design and lazy loading for optimized performance across devices, reducing bounce rates significantly.

Technical Skills

Languages: Languages: Python, C/C++, JavaScript, TypeScript, Go, PHP
Frameworks/Libraries: React, Node, Express, Flask, GSAP
Database & Cloud Technologies: MongoDB, MySQL, Firebase, PostgreSQL
Cloud/Tools: Docker, Git, Linux, Postman, AWS

Position of Responsibility

Joint Secretary | **May 2025 – Present**
Microsoft Learn Student Chapter (MLSC) | *Thapar Institute of Engineering and Technology*
- Organized and hosted technical workshops on Competitive Programming and Debugging best practices.
- Led the development of 5+ open and closed-source projects; mentored a team of 15+ contributors, fostering a collaborative and growth-focused development environment.