

# KOMAL KUMAWAT

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## Experience

### IBM Software Intern | Remote | June 2024 - Aug 2024

- Built a full-stack MERN web application with Tailwind CSS to promote SDG-3: Good Health & Well-being, focusing on mental and physical wellness.
- Designed and deployed an interactive UI that improved content accessibility, leading to 30% faster navigation and higher user engagement.
- Implemented a scalable backend with MongoDB & Express, supporting 100+ daily active users and enabling smooth content delivery for awareness campaigns.

### IIT Ropar Research Intern | Ropar | Mar 2024

- Developed ConvSFNet, a novel deep learning architecture combining ConvNeXt, SE blocks, and FPN for disaster image analysis.
- Benchmarked on the MEDIC dataset, outperforming models like DenseNet121, ResNet50, and EfficientNet-B1.
- Improved average F1-score by 2.41%, excelling in severe damage classification for real-time disaster response.

## Projects

### MeshSpire (Node.js, Express, React, NextJS, Tailwind, PostgreSQL, Prisma, WebRTC, Razorpay, AWS, Nginx)

- Built a scalable MERN platform with chat, video calls, and payments, enabling instant tutor-student connections.
- Onboarded 8 tutors and 33 students, validating real-world adoption with live sessions powered by real-time messaging and video streaming.
- Deployed on AWS with Nginx load balancing, using PostgreSQL, Prisma, and Razorpay for secure, scalable, and reliable operations.

### QuickPay (Node.js, Express, React, NextJS, Tailwind, PostgreSQL, Prisma, WebRTC, Razorpay, AWS, Nginx)

- Developed a full-stack MERN application with Node.js, Express, React, Next.js, and Tailwind, enabling peer-to-peer payments, wallet recharge, and transaction history.
- Integrated Razorpay payment gateway and PostgreSQL + Prisma ORM for secure money transfers and real-time balance updates.
- Deployed on AWS with Nginx reverse proxy, achieving <200ms transaction response time and tested with 100+ concurrent payment requests.

### BrainSketch (Node.js, Express, React, NextJS, Tailwind, PostgreSQL, Prisma, WebRTC, Razorpay, AWS, Nginx)

- Built a collaborative drawing platform using React, Next.js, Tailwind, and WebRTC, allowing multiple users to sketch and brainstorm in real time.
- Implemented live cursor sharing, shape tools, and undo/redo features, ensuring smooth collaboration across devices.
- Optimized scalability with Node.js, Express, PostgreSQL, and AWS deployment, tested with 50+ concurrent collaborators in a session.

## Skills

- Languages:** JavaScript (ES6+), TypeScript, Python, C, C++, SQL
- Frameworks:** React, Redux, Next.js, Tailwind, Node.js, Bun, Express
- DataBase & DevOps:** PostgreSQL, MongoDB, Redis, AWS (EC2/S3/Route 53), Docker, Nginx, Git

## Achievements

Solved 500+ problems on LeetCode : Enhanced problem-solving and DSA skills  
Smart India Hackathon (SIH) Participant : Built innovative solutions in a team setting

## Education

### Bachelor of Technology | CSE

NIMS Institute of Engineering & Technology | CGPA 8.8 | 2022-2026