Madhav Bohra

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EDUCATION

Birla Institute of Technology and Science, Pilani *(October 2021 – August 2025)*
Bachelor of Engineering, Civil
Central Academy, Jodhpur *(2011 – 2020)*
Senior Secondary Education, C.B.S.E. *Percentage - 82.4%*
Secondary Education, C.B.S.E. *Percentage - 92.8%*

INTERNSHIPS

Tech Lead | MyEasyPharma (Remote, Delhi) *(August 2024 – December 2024)*

- Developed a responsive website using Next.js, achieved **#1 Google SEO rankings**.
- Built a shared backend for the website and app using Nest.js, ensuring seamless integration and performance.
- Published the app on a **closed Google Play network (120 test users)** using React Native and Expo ecosystem.
- Integrated an AI-driven health chatbot using OpenAI's API, enhancing user engagement.

Backend Engineer | letsTAG.in (Remote, Pilani) *(June 2023 – August 2023)*

- Designed and developed the backend for a social app with the TAG founding team, from architecture to deployment.
- Built and deployed **10+ custom APIs** for event and restaurant booking using Django & Django REST Framework.
- Implemented secure user authentication with JWT tokens and OTP verification, enhancing security and user trust.

PROJECTS

UniCode – Online Test Monitoring & Anomaly Detection Portal *(August 2024 – November 2024)*

- Developed a web portal for test monitoring using Next.js (frontend) & Spring Boot (backend) under Prof. Avinash.
- Added IP tracking, upload/download monitoring, and multi-file handling for enhanced exam security.
- Built an anomaly detection system to flag almost **100% irregular activities**, generating real-time alerts for admins.
- Tested the portal with **350 students** during the OOP course, ensuring reliable performance and accuracy.

Research Project - Algorithmic Pair Trading *(May 2023 – July 2023)*

- Researched algorithmic pair trading strategies to evaluate their effectiveness as a hedge against market volatility.
- Utilized yfinance & Python for data extraction, time-series analysis, and backtesting, optimizing strategy performance and achieving **60% returns during COVID & 12% in stable markets**.
- Co-authored a research paper on the findings, submitted to ***Annals of Finance and Asia-Pacific Financial Markets.***

Automated Code Evaluation Tool *(May 2023 – July 2023)*

- Developed a code evaluation tool using Python & OpenAI's GPT-4 API, evaluating **500-600 student submissions.**
- Reduced **grading time from 7 days to under 4 hours**, improving efficiency by **95%**.
- Optimized **cost to ₹300 per batch**, minimizing manual grading efforts for PhD research faculty.

Drone-Based Disaster Monitoring *(September 2023 – December 2023)*

- Developed a GAN-based image inpainting model to restore corrupted disaster images, achieving **85% reconstruction accuracy** for drone-based monitoring.
- Pre-processed and inpainted **1,000+ disaster images**, enhancing data usability and analysis efficiency.
- Implemented a LeNet-based CNN classifier, achieving **92% accuracy** in categorizing inpainted disaster images.