

# RAJ MAURYA

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## OBJECTIVE

Passionate B.Tech student in Mathematics and Computing at IIT Mandi with a deep love for mathematical problem-solving and exploration at the intersection of theory and application. Strong foundations in Deep Learning, Data Science, and Cybersecurity, complemented by research experience in computational complexity. Driven by curiosity to tackle challenging problems and build innovative AI solutions that push boundaries.

## EDUCATION

- Indian Institute of Technology, Mandi** 2023 – 2027  
*B.Tech - Mathematics and Computing; CGPA: 8.86/10*
  - Relevant Courses:** Data Science, Data Structures and Algorithms, Deep Learning, Machine Learning, Linear Algebra, Differential Equations(Partial-Ordinary), Probability & Statistics, Networking, Optimization, Mathematical Modelling

## EXPERIENCE

- Research Intern - Theoretical Computer Science, IIT Mandi** Dec 2024 – Jan 2025
  - Studied reductions and complexity classes in decision problems.
  - Encoded NP-hard problems in SAT for experimentation.

## PROJECTS

- NeuroTrade - Stock Forecasting using Fokker–Planck PINNs** Git
  - Implementing a PINN to estimate stochastic drift-diffusion parameters from empirical stock data
  - Combined numerical PDE solvers with neural networks for robust inverse modeling
- Ethical Keylogger** Git
  - Designed an ethical keylogger for parental control, featuring keystroke capture and activity monitoring.
  - Integrated sentiment analysis to detect cyberbullying.
- NetSentinel** Website
  - Full-stack cybersecurity dashboard, provides real-time network anomaly detection and visualization
- SubtitleAI Pro** Git
  - Chrome extension that generates subtitles for YouTube videos using Speech-to-Text models
- Genweb** Website
  - AI-driven website generator and LLM integration for automatic site creation and deployment
- MatBot** Website
  - Bot for solving MATLAB related queries and issues

## SKILLS SUMMARY

- Languages:** C++, Python, JavaScript, Bash
- Frameworks/Tools:** TensorFlow, PyTorch, Flask, React.js, Node.js, Express.js, Next.js, Keras
- Libraries:** Pandas, NumPy, Matplotlib, OpenCV, Scikit-learn
- Other:** Linux, Git, Cybersecurity, Blockchain (Basic), Robotics (Basic)

## CERTIFICATIONS

- Machine Learning - Andrew Ng(Coursera)
- Blockchain Development Bootcamp
- Data Science using Python
- Cybersecurity Essentials - IBM SkillsBuild

## KEY ACHIEVEMENTS

- Portable Oxygen Concentrator Prototype Built a working IoT-enabled prototype
- DeepFake Classifier Developed CNN model for real vs manipulated video detection
- Child Activity Monitoring App Designed app for parental digital safety alerts

## POSITIONS OF RESPONSIBILITY

- Member, Research Society, IIT Mandi

2024