SANDEEPAN CHAKRABORTY

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EDUCATION

- **Integrated Masters (BTech + MTech) of Technology in Computer Science and Engineering with Specialization in Artificial Intelligence**   (2021 - 2026)
Cumulative GPA - **8.54**, VIT Bhopal University, Bhopal, M.P.

SKILLS

- **Programming:** Java, JavaScript, Python
- **Libraries and Frameworks:** React.js, Node.js, Express.js, Redux Toolkit, Material UI
- **Tools and Platforms:** Jupyter Notebooks, VS Code, MS Office
- **AI/ML:** Deep Learning (LSTM), Computer Vision, Applied Machine Learning

PROJECTS

LSTM model for Indian sign language recognition
Tech Stack: Python, Pandas, NumPy, Scikit-learn, OpenCV, Matplotlib, Seaborn

- Orchestrated a LSTM and Computer Vision–based sign language recognition system, achieving 91.50% accuracy.
- Processed and analysed a dataset of 200K samples from 8 subjects to enhance model robustness.
- Optimised system efficiency for real-time inference and scalability.
- Impact: Achieved 91.50% accuracy with an AI-powered LSTM-based sign language recognition system to enhance accessibility and real-time communication

MERN Stack Admin Dashboard
Tech Stack: Material UI, Redux Toolkit, Node.js, Express.js, MongoDB, Mongoose

- Designed a responsive dashboard using Material UI,Nivo Charts to visualize sales, inventory, and user metrics.
- Implemented Redux Toolkit, reducing API calls by 30% through optimized caching and state management.
- Optimized a scalable backend with Node.js/Express.js (12+ REST APIs)
- Boosted MongoDB performance by 25% using Mongoose indexing.
- Secured system with JWT authentication, blocking 100 unauthorized access attempts during testing.
- Impact: Streamlined data analysis, reducing report generation time from hours to minutes.

Full Stack E-Commerce Website
Tech Stack: React, Material UI, Redux Toolkit, Node.js, Express.js, MongoDB, Mongoose, JWT

- Built an interactive admin interface for sales analytics, inventory control, and customer data visualization.
- Streamlined frontend state management with Redux Toolkit, cutting redundant API calls by 35%.
- Developed a robust backend with 15+ RESTful endpoints using JWT authentication for protected data access.
- Boosted database efficiency by 20% through Mongoose query optimization, reducing response times significantly.
- Impact: Automated reporting processes, slashing operational time from 2 hours to <15 minutes.

CERTIFICATIONS

- Cloud Computing (IIT, Kharagpur) – NPTEL
- Applied Machine Learning in Python – Coursera
- Full Stack Developer MERN – SmartBridge (in partnership with MongoDB)

CO-CURRICULAR ACHIEVEMENTS

- Member, Data Science Club – VIT Bhopal
- Leetcode 350+ questions
- GitHub contributions 1500+