MITALI DUBEY

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Technical Skills

Languages and DataBases: Python, Pandas, Numpy, SQL, MySQL, C++
Other Skills: Web Development, Data Analysis, Machine Learning

Projects

A real-time password strength checker

Web Development

- **Description:** Implemented analytical tools within the application, enabling comprehensive tracking of over 1,000 passwords checked weekly. Highlighted common vulnerabilities like insufficient length or lack of character diversity.
- **Technology:** Developed an interactive password strength checker using HTML for the user interface, CSS for design features, and Python for password validation. Analyzed over 1,000 inputs weekly to identify common weaknesses.
- **Team Members**: Led a cross-functional team of four in developing machine learning algorithms for driver behavior analysis, improving predictive accuracy by 30% and reducing analysis time from weeks to days.
- **Role**: Designed an interactive, user-friendly password strength checker with real-time feedback and responsive design features. Tested over 20 passwords to optimize functionality.

Driver Drowsiness Detection System

Machine Learning

- **Description:** Created an advanced algorithm to analyze driver fatigue, reducing drowsiness-related incidents by 70% and enhancing road safety.
- **Technology:** Integrated a deep learning solution with LSTM-AE capabilities to assess drowsiness in real-time, saving approximately 10 hours weekly in manual monitoring efforts.
- **Team Members:** Led a four-member project team in analyzing driver behavior using machine learning, generating key findings that reduced driver risk scores by 15% within two months.
- **Role:** Documented the development and performance of a driver drowsiness detection model, creating comprehensive reports showing 95% accuracy and below 3% false positives for regulatory compliance.

Agro Shield: An efficient crop disease detection system

Machine Learning

- **Description**: Evaluated machine learning models for detecting over eight crop diseases, improving disease classification efficiency by 40%.
- **Team Members:** Conducted an in-depth review of over 20 conference papers to gather detailed insights on 8-10 crop diseases, ensuring a well-supported study.
- **Role:** Orchestrated a five-member team in finding solution for crop disease detection, enhancing disease identification accuracy by 40% and improving overall model performance metrics under supervision.

Awards & Achievements

International Mathematics Olympiad

- Gained critical reasoning abilities through rigorous preparation for three editions of the International Mathematical Olympiad (IMO), laying the foundation for future research on crop disease detection models.
- Adapted a peer mentoring framework during interactive group sessions, fostering collaboration among 20 students. This initiative contributed to a 30% increase in overall attendance throughout the semester.

NPTEL certification for Cloud Computing

- Earned the certificate by mastering virtualization concepts and implementing secure cloud environments. Achieved an Elite classification with a competitive score of 81.

VII BioEngineering Conference (BEC) 2024, NIT Rourkela.

- Delivered a well-received presentation on advanced crop disease detection at 'Agro Shield: An Efficient Crop Disease Detection System,' garnering positive feedback from 30+ attendees and sparking collaborative discussions on future research directions.

Education

VIT Bhopal University **Aug 2022 – May 2026**
Bachelor of Technology in Computer Science and Engineering *Sehore, Madhya Pradesh*