

1) Drowsiness Assessment and Alarming: ML project

A real-time driver drowsiness detection system monitors eye movements to prevent fatigue-related accidents. The project follows four main steps: First, collecting labeled eye images (open/closed) to create the training dataset. Second, implementing a Convolutional Neural Network (CNN) for image feature extraction. Third, training and evaluating the CNN model to accurately detect drowsy states.

2) NLP-based Sentiment Analysis for Depression Detection: ML project

This project proposes developing an intelligent system to identify potential signs of depression through social media posts. With approximately 350 million people suffering from depression worldwide (WHO), many individuals express their struggles online rather than seeking direct help.

The proposed system will:

Data Collection: Gather diverse social media posts to create a comprehensive training dataset, incorporating both general content and posts indicating potential signs of depression.

Processing Framework: Implement advanced natural language processing techniques to clean and standardize text data, converting social media language into analyzable formats while preserving meaningful emotional indicators.

Analysis Engine: Develop and test various machine learning models, comparing traditional approaches with deep learning methods. The system will incorporate evolutionary computing techniques for feature optimization to enhance detection accuracy.

3) Hostel Management System: Website

A. Student Portal:

- **Personal Dashboard:**
 - Profile management with hostel-specific details
 - Real-time status tracking of applications
 - Personalized notification center
- **Core Features:**
 - Digital leave application system with status tracking
 - Structured complaint filing system with urgency levels
 - Hostel-specific notice board
 - Lost and found management system
 - Anonymous feedback submission
 - Digital mess menu voting system
 - Online committee election platform

B. Administrative Portal:

- Management Dashboard:
 - Consolidated view of all student activities
 - Analytics and reporting tools
 - Urgent complaint highlights
- Administrative Tools:
 - Batch processing of leave applications
 - Notice distribution system with targeting options
 - Complaint resolution tracking
 - Student data management
 - Performance analytics and reports

C. Guest Portal:

- Public Information:
 - Hostel facilities overview
 - Contact information
 - Important announcements
 - Virtual tour
 - Admission information

Additional Improvements:

A. Face Recognition Attendance System:

- Automated entry/exit tracking
- Real-time attendance monitoring
- Integration with leave management system
- Anomaly detection and alerting

B. Digital Democracy Features:

- Secure online voting system for hostel committees
- Digital suggestion box for mess menu improvements
- Anonymous feedback mechanism
- Poll creation for student opinions