

Road Accident Prevention and Detection System Using AI and IOT

Proposal

Submitted in the partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING
IN
COMPUTER SCIENCE WITH SPECIALIZATION IN
ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Submitted by:

Syed.Fakruddin	21BCS6927
Aadi Shankar	21BCS8261
Puneeth	21BCS10566
DhineshKumar	21BCS10635



CHANDIGARH
UNIVERSITY
Discover. Learn. Empower.

Under the Supervision of:

Mr. Dayal Chandra Sati

CHANDIGARH UNIVERSITY, GHARUAN, MOHALI - 140413,

PUNJAB

July, 2024



DEPARTMENT OF APEX INSTITUTE OF TECHNOLOGY

Project Proposal

Project Title:- Road Accident Prevention and Detection System Using AI and IOT

Project Scope:-

Objective:

Using AI and IoT technologies, we need to create a complete system to avoid and detect traffic accidents. In order to avoid accidents, the system will use sensor fusion to collect precise data from a variety of sensors, identify cars in blind zones, and track driver awareness. An extensive array of a goal.

Focus Points

1. Sensor Fusion for Accurate Results

Overview: Consolidate information from several sensors, including cameras, radar, Li DAR, accelerometer, and gyroscopes, to produce an accurate picture of the environment and the vehicle itself.

Implementation: To combine data from several sensors, utilize methods like Bayesian networks and Kalman filters.

Assure real-time processing to deliver prompt feedback for decisions that are crucial to safety.

2. Blind Spot Detection and Decision Making Using AI

Overview: We utilize AI to identify cars in the driver's blind areas and decide whether to change lanes or steer clear of specific situations.

Implementation: To keep an eye on areas surrounding the car that the driver cannot see, use radar and cameras.

Use AI models to anticipate possible collisions by analyzing the trajectory, speed, and closeness of neighboring vehicles.

Integrate into the control system of the car to help or automate decision-making

3. Driver Drowsiness Detection Using AI

Overview: We use accelerometer data and vehicle movement patterns to track the driver's level of awareness and identify any indicators of exhaustion or drowsiness.

Execution:

Accelerometer can be used to identify unusual driving behaviors such as abrupt swerves or erratic speeding.

We create AI algorithms to evaluate patterns, like micro corrections in steering or delayed reactions, that point to driver fatigue.

Give the driver real-time alerts and, if needed, start safety procedures like braking the car or vibrating the seat.

Requirements

Hardware Requirements

- Sensors
- Processing Units
- Communication Modules
- Storage Power Supply(battery)

Software Requirements

- Operating System
- AI and Machine Learning
- Frameworks Sensor Fusion
- Data Processing Communication Protocols

STUDENTS DETAILS

Name	UID	Signature
Syed.Fakruddin	21BCS6927	
Puneeth	21BCS10566	
Y.Aadi Shankar	21BCS8261	
Dhinesh Kumar	21BCS10635	

APPROVAL AND AUTHORITY TO PROCEED

We approve the project as described above, and authorize the team to proceed.

Name		
	Title	Signature (With Date)
Mr.Dayal Chandra Sati	Supervisor	