Advance Blind turn traffic indicator and accident prevention system.

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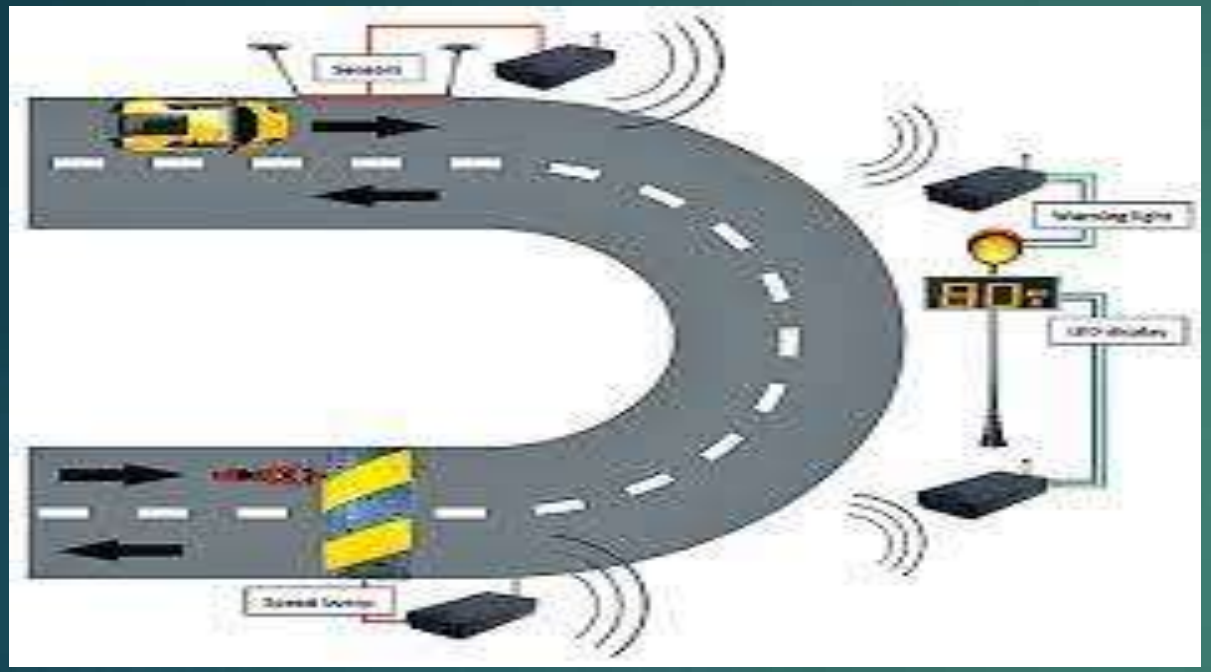
Project Idea



There are many accidents due to blind turns and U-turns especially in hilly areas because the drivers of one side are not aware that the vehicle is coming on the other side and at what speed and which type of vehicle, due to which it leads to accidents.

1. The Objective is to decrease the number of accidents in curve roads.
2. This is done by alerting the driver by means of LED light which glows when vehicle comes from the other side of the curve.
3. It will display what type of vehicle which is coming on the other hand of the road.
4. It will also display speed of vehicle which is coming on the other hand of the road.

IOT(INTERNET OF THINGS)

The Internet of Things, or IOT, refers to the billions of physical devices around the world that are now connected to the internet, all collecting and sharing data.

By help of IOT we will detect the vehicle and its speed by using Sensors.

AI(Artificial Intelligence)

Artificial Intelligence (AI), the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings.

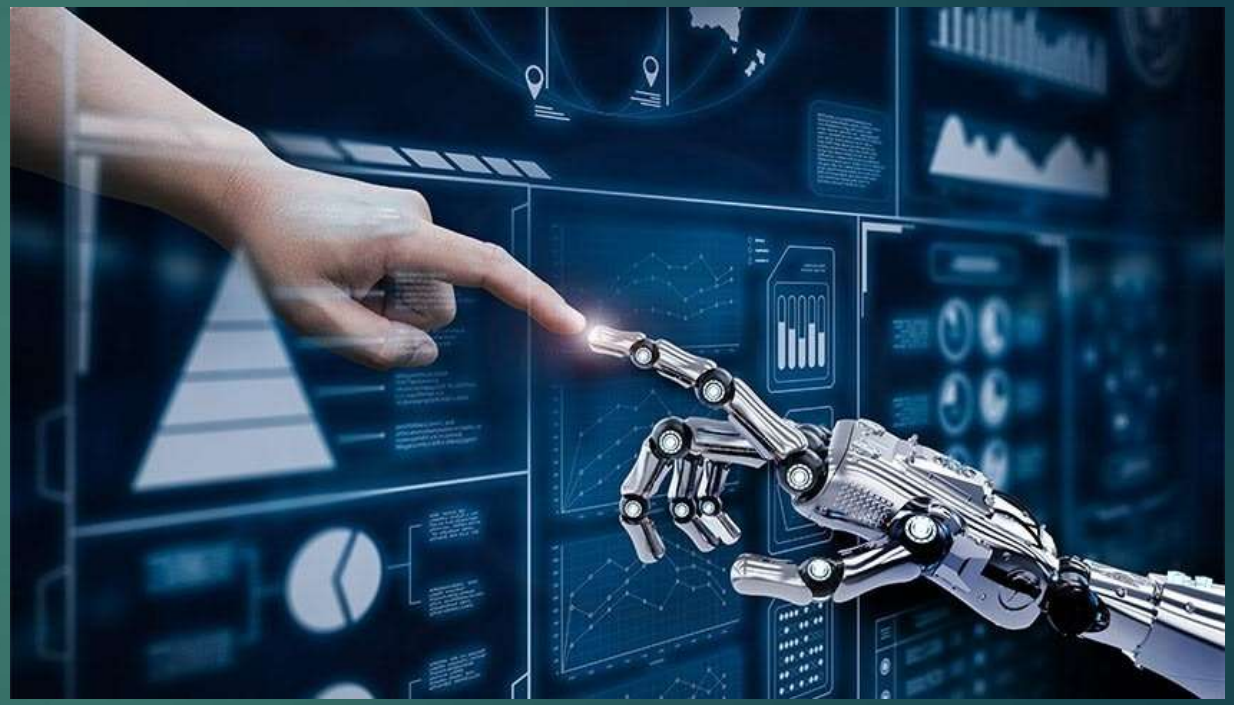
The term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience.

Artificial intelligence is proving to be a game-changer in healthcare. AI-enabled virtual assistants are reducing unnecessary hospital visits and giving nurses 20% of their time back in the process..

Machine Learning

Machine learning is a branch of artificial intelligence (AI) and computer science which focuses on the use of data and algorithms to **imitate the way that humans learn**, gradually improving its accuracy.

With the help of this technology we are going to identify types of vehicle which will be displayed to the drivers.



What is the project trying to accomplish ?

The Objective is to decrease the number of accidents in curve roads. This is done by alerting the driver by means of LED light which glows when vehicle comes from the other side of the curve as well as it will display what type of vehicle is coming on the other hand of the road and its speed also.

What needs does it seek to address?

It is mainly used to avoid the accidents on hill station because the driver not able to see another side of vehicle which is called blind spot. Thus, it will be an effective solution that can be implemented in mountain and ghat roads where mirrors cannot be used effectively due to all whether conditions. This system can greatly improve the safety of the passengers traveling through those roads.

Project Requirement

Hardwares :-

1. Arduino
2. Crystal Oscillator
3. Resistors
4. Capacitors
5. Transistors
6. Cables and Connectors
7. Diodes
8. PCB and Breadboards
9. LED
10. Transformer/Adapter
11. Push Buttons
12. Switch IC
13. IC
14. IC Sockets
15. Sensors

Software:-

The arduino integrated development environment (IDE) is a cross-platform application (for windows, macos, linux) that is written in the programming language java. It is used to write and upload programs to arduino board.

A smart vehicle speed monitoring system is proposed using arduino and speed sensor.

And we will also use AI/ML framework for detecting which type of vehicle

Project Motivation

Why do you care about the problem?

There are many dangerous roads in the world like mountain roads, narrow curve roads, T roads. Some mountain roads are very narrow and they have many curves.

The problems in these curve roads is that the drivers are not able to see the vehicle or obstacles coming from another end of the curve.

Hence there is a need of many road safety systems. To avoid these problems in curve roads of mountain areas, we have proposed this vehicle accident prevention system.

What do you expect to learn from the project?

By the help of this project we are going to understand the basic concepts of IOT ,Artificial Intelligent, machine learning as well as software development life cycle and Team working environment which will help us to suceed in future..

Project Stakeholders

To whom the solution matter.

Stake Holders of Project :-Various stakeholders such as native people from hilly area, tourist, frequent drivers, Transporters.

Team Members and their expertise

Guide	Technical Expertise
Prof. Nisha Rathi	Machine Learning, Analysis and Design of Algorithms

Student Name and Enrollment No.	Technical Expertise
Aman Sharma (0827CT191008)	C, C++, HTML, CSS, JAVASCRIPT, JAVA
Aniket Tiwari (0827CT191010)	C++, HTML, CSS, JAVASCRIPT, JAVA
Ashwin Vyas (0827CT191012)	C, C++, JAVA, HTML

Conclusion

Thus, the system helps to prevent head-on collision and also a fatal accident that is very frequent in blind corners. With the inclusion of visual systems, the current situation in the corner can be showcased. The system alerts the driver before entering the corner itself so that driver can take precautionary steps in order to sail through the corner. Thus, it will be an effective solution that can be implemented in mountain and ghat roads where mirrors cannot be used effectively due to low visibility.

This system can greatly improve the safety of the passengers traveling through those roads.