ROAD ACCIDENT PREDICTION AND CLASSIFICATION

Abstract

With the exponentially increasing number of vehicles, road safety is a matter of huge concern. Road accidents kill 1.2 million people every year. In 2021, there have been 33296 accidents with injuries reported in Kerala alone. It causes loss of lives and economical damage, due to which is a serious concern which needs to be solved

This application predict the severity of an accident occurring at a particular location and time using machine learning algorithms . Factors like speed limit, age, weather, vehicle type, light conditions and day of the week will be used as parameters for training the model. We use the road accident data provided by the government as the dataset of which 80% is used to train the model and 20% to test it. An ensemble of machine learning and deep learning models by combining Random Forest and Convolutional Neural Network called RFCNN will be used for the prediction of road accident severity. User data at a specific time will be used to predict the severity of a road accident at the given location. The severity metrics are 1= Fatal, 2= Serious, 3= Slight.

An sms is send to the police containing the location coordinates of the user and the accident severity predicted for that location. The web application takes the user input and output is displayed and a notification is sent to the police to take preventive measures. The front end takes the input from the user and sends it to the backend where the Machine Learning model is deployed. The model will run with the input data and predicts the severity of an accident occurring at the respective location of the user. This model will play an important role in planning and management of traffic and would help us reduce a lot of road accidents in the future.