A Project Report

On

ANALYSIS AND PREDICTION OF ROAD ACCIDENT USING MACHINE LEARNING

Submitted to

VISVESVARAYA TECHNOLOGICAL UNIVERSITY BELGAUM, KARNATAKA- 590014

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in

Information Science and Engineering

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CERTIFICATE

This is to certify that the projectentitled **"Analysis and Prediction of Road Accidents using Machine Learning"** has been successfully completed by

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ABSTRACT

Road accidents are one of the most relevant causes of injuries and death. This is also one of the serious issues, which can possibly cause disabilities, injuries and even fatalities. With the exponentially increasing number of vehicles, road safety is a matter of huge concern. Road accidents kill 1.2 million people every year. It causes loss of lives and economical damage, due to which is a serious concern which needs to be solved.

There are many of reasons that contribute to accidents. Some of them are internal to the driver but many are external. For example, adverse weather conditions like rain, cloudy, and fog cause partial visibility and it may become difficult as well as risky to drive on such roads. This paper aims to provide an Overview of the area of the art in the prediction of road accidents through clustering techniques and machine learning algorithms.

We have used Clustering techniques and Machine Learning algorithms to prediction. we have used the k-means clustering as it's an unsupervised learning which is used for the unlabelled data therefore data are not labelled into any group of cluster. And also the techniques of regression with a large set of accident's data to identify the reasons of road accidents were used. Analysis is done for the identification of factors involved in the accident that occur together which is then plotted in a graph form. Factors like area, alarm type, time, weather condition, visibility, accident severity and pothole severity. This shares a lot in understanding the circumstances and causes of accident.

And this ultimately helps the Government to adapt the traffic safety policies with different types of accidents and situations. We have used Machine Learning tools such as Python, Scikit-Learn, Numpy, visual studio etc. And the road accident data provided by the kaggle and government websites. And we have chosen machine learning algorithm that's linear regression as it showed the highest accuracy of 86%.