Prediction and Analysis of Injury Severity in Traffic System using Data Mining Techniques

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Abstract

Road traffic is an essential part to life, but the repeated road accidents bring severe bodily harm and loss of property. Road Traffic Accidents (RTAs) are considered as major public health concern, resulting in 1.2 million deaths and 50 million injuries worldwide each year as per estimation. The want of study is to scrutinize the performance of different taxonomy methods using WEKA and TANAGRA tool on Traffic Injury Severity Dataset. This paper presents results comparison of three supervised data mining algorithms using various performance criteria. The performance is evaluated by the algorithms Naive bayes, ID3 and Random tree. Comparison of Performance of data mining algorithm based on Error rate, Computing time, precision value and
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accuracy. The comparison of the model using WEKA experimenter showed that Naive Bayes outperforms Random tree and ID3 algorithms with an accuracy of 50.7%, 45.07 and 25.35% respectively and comparison of the model using TANAGRA experimenter showed that Random tree outperforms Naive Bayes and ID3 algorithms with an accuracy of 92.95%, 67.6% and 57.74% respectively. In the end, we have to conclude that TANAGRA tool is the best data mining tools as compare to the WEKA.

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Index Terms

Computer Science

Information Sciences

Keywords

Road Traffic Accidents  Data Mining  Naive Bayes  Id3  Random Tree  Weka  Tanagra

Accuracy Measure