Abstract

This paper emphasizes the importance of Data Mining classification algorithms in predicting the vehicle collision patterns occurred in training accident data set. This paper is aimed at
deriving classification rules which can be used for the prediction of manner of collision. The classification algorithms viz. C4.5, C-RT, CS-MC4, Decision List, ID3, Naïve Bayes and RndTree have been applied in predicting vehicle collision patterns. The road accident training data set obtained from the Fatality Analysis Reporting System (FARS) which is available in the University of Alabama’s Critical Analysis Reporting Environment (CARE) system. The experimental results indicate that RndTree classification algorithm achieved better accuracy than other algorithms in classifying the manner of collision which increases fatality rate in road accidents. Also the feature selection algorithms including CFS, FCBF, Feature Ranking, MIFS and MODTree have been explored to improve the classifier accuracy. The result shows that the Feature Ranking method significantly improved the accuracy of the classifiers.

References

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Index Terms

Computer Science
Data Mining

Keywords
Classification Algorithms
Feature Selection Algorithms
Manner of Collision
Fatal
Severity
Collision Patterns
Prediction