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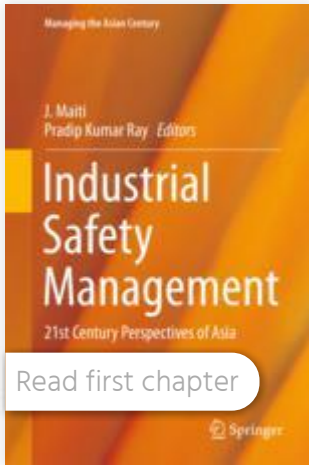
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Abstract

Prediction of occupational incidents is an important task for any industry. To do this, reactive data has been used by most of the previous studies in this domain. As an extension of the existing works, the present study has used the underused proactive data coupled with reactive data to establish the predictive models so that the information inherent in both data sets could be better utilized. The main aim of the study is to predict the incident outcomes using mixed data set comprising reactive and proactive data together. Two decision tree classifiers, i.e. classification and regression tree (CART) and C5.0, have been implemented with tenfold cross validation. Furthermore, the ensemble technique, namely adaptive boosting has been implemented to increase the classification accuracy. Results show that boosted C5.0 produces higher accuracy than others for the prediction task. Furthermore, the rules obtained produce the insight of the incidents. The limitation of the present study includes the use of less amount of data and the requirement of experts' domain knowledge for a large span of time. Future scope of the study includes the proper feature selection for preparation of the mixed data set and building the better classification algorithm for better prediction of occurrence of accidents. The present work sets out the potential use of both types of data sources together.

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