ANALYSIS AND PREDICTION OF OCCUPATIONAL ACCIDENTS

AIM

The main aim of the project is to provide safety to workers at construction site from accidents by analyzing past accident data by using machine learning algorithms and text mining technique.

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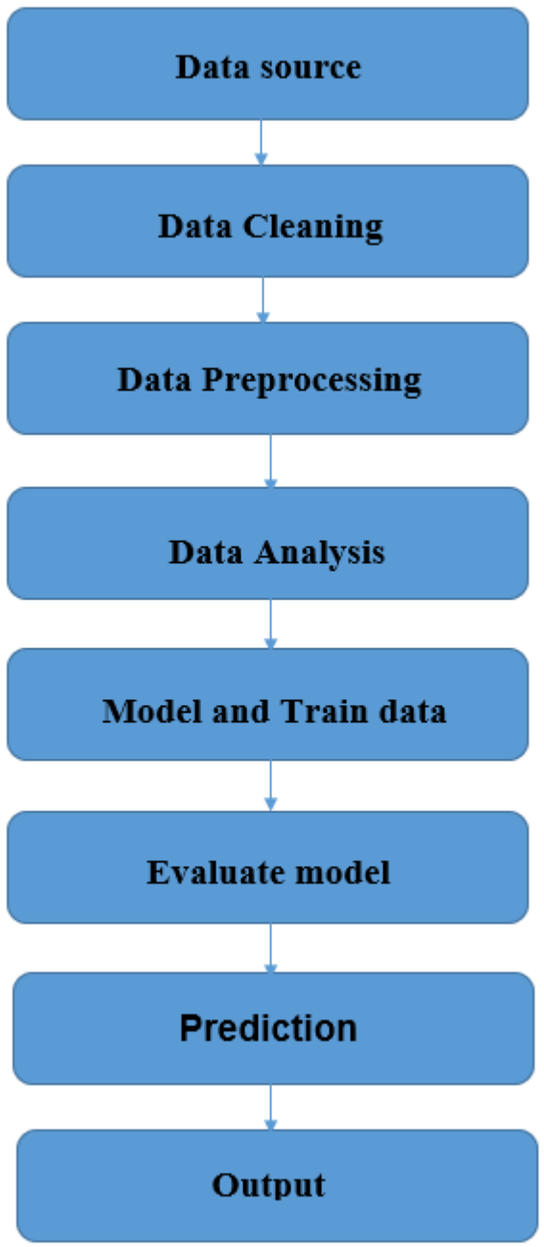
INTRODUCTION

Construction industry remains globally the most dangerous work place . There are > 2.78 million deaths every year caused by occupational accidents. Construction accidents not only cause severe health issues but also lead to huge financial loss. To prevent occurrence of similar accidents and promote workplace safety, analysis of past accidents is crucial. Based on the results of cause analysis, proper actions can be taken by safety professionals to remove or reduce the identified causes. . It is also noted that one major factor contributing to the risk of an accident is the presence of harmful objects such as misused tools, sharp objects nearby, damaged equipment.

In this study, text mining and NLP techniques are applied to analyse the construction site accidents using the data from Occupational Safety and Health Administration (OSHA). An ensemble model is proposed to classify the causes of accidents.

ARCHITECTURE



RESULT

Accuracy with SVM: 70.0
Accuracy with KNN: 55.833
Accuracy with Naïve Baiyes: 50.833
Accuracy with Decision Tree: 61.6
Accuracy with LogisticRegression: 70
Accuracy with RandomForest: 65.0
Accuracy with VotingClassifier: 88.33

The voting classifier classifies the causes of the accidents accurately

CONCLUSION

Analysing the construction accident reports leads to valuable knowledge of what went wrong in the past in order to prevent future accidents. To be more specific, accident causes classification is essential as prevention strategies should be developed based on different causes accordingly.

REFERENCES

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2. https://lib.dr.iastate.edu/cgi/viewcontent.cgi?article=8629&context=etd

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