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Road Accident Detection System Using Android

Ashwini Lotke [1] , Swarupa Shinde [2] , Shruti Jadhav [2] , Prof. Bhise.A.K[2]

Dept. of Computer Engineering, Sau. Sundarbai Manik Adsul Polytechnic Chas, Ahmednagar, Maharashtra, India [12]

ABSTRACT: Road and traffic is most important issue not only for Indian Government but also for common people. Mostly, it is found that road accident happening are more frequent at certain specific locations i.e. black spot. The analysis of these black spot can help in identifying certain road accident factor that make a road accident to occur frequently in that locations. In this project we apply statistics analysis and Eclat algorithm on the Fatal Accident dataset as an attempt to address this problem. Association rule mining is one of the popular data mining techniques that identify the causes of accident of road accident. In this project, we first applied Eclat algorithm to group the accident locations into A level, B level, C level accident location. Eclat algorithm takes accident level count as a factor to cluster the locations. Then we will use association rule mining to identify these locations. The rules show different factors associated with road accidents at different locations. For all this we will provide accident data that are issue from Nashik city Commissioner office. Safety driving suggestions will be making based on accident data, association rules, classification model, and clusters obtained.

KEYWORDS: Eclat   algorithm, Clustering, Classification, Association, GPS tracking, Roadway Fatal Accident.

I. INTRODUCTION

To identify important factors to road accidents in A.Nagar we have obtained a large data set every accident recorded in the A.Nagar district commissioner office in the Year 2014-2017. The data is currently in an unsorted and scatter format and is stored in a Microsoft excel sheet database table. Unfortunately with the data in its current for- mat, no relevant points or conclusions can be drawn. It is hoped that by applying data mining processes and techniques to the data set, relevant attributes and patterns can be established. And scientific study will also done that will helpful to government authorities and citizen. The main achievements of this project is to greater awareness of the conditions affecting road traffic accidents Establishing which individuals are most likely to be involved in a road traffic accident To develop a project for identifying the black spots on roads of Nagar city where frequently accidents happened. The attributes of Eclat algorithm like execution time, depth first search reduces memory requirement like this attributes of Eclat algorithm matches to our data set. The data set collected from Commissioner of Nagar. Using data mining technique such as Eclat algorithm, Association rule and FP- growth we are identifying the black spots on roads and identify the geographical location where frequently accident occur. After identification of black spots user get information through user application.Road accidents and Crime is most important issue not only for Indian government but also for common people and tourist who choose India for trip. Road safety becomes a major public health concern. Everyday lots of vehicles driving on the road, and accidents and crime happen at anytime and anywhere. Some people die in accident or crime also. As human being we all want to avoid accident or crime and stay safe. To find out how to drive safer, GPS Application technique could be applied on the accident or crime dataset to show some valuable information and black spot on map, thus give driving suggestion

II. RELATED WORK

Today road accidents and crime are increasing abruptly and it is one of the major causes for the death of tourist. The time between the accident/crime and when the ambulance and any other help reach that location of accident/crime plays an important role in saving their lives. Accident and crime are leading cause of death that is the number of tourist face problem of any type of crime than the number of tourist people killed in all our wars. In this application if our accident/crime happens then the people can click photos and post them on the app so that the photos will be shared further by application to the nearby hospital so that the people would get the treatment. But here we have to depend on other people and it is a little time consuming one. Hence, to provide efficient help to our tourist is necessary. That's

why we introduce new application which gives the tourist traveller a voice message from our application because of that the tourist people keep safely take their ways of travel.

1.   Agrawal, T. Imieliski, A. Swami, Mining Association Rules Between Sets of Items in Large Databases, Proceedings of the 1993 ACM SIGMOD Inter- national Conference on Management of Data, ACM, New York, NY, USA, pp. 207216, 1993.

2.   Agrawal, R. Srikant, Fast Algorithms for Mining Association Rules in Large Data-bases, Proceedings of the 20th International Conference on Very Large Data Bases, Morgan Kaufmann Publishers Inc., San Francisco, CA, USA, pp 487-499, 1994.

3.   Araar et al., Mining road traffic accident data to improve safety in Dubai, Journal of Theoretical and Applied Information Technology, 47(3), pp. 911-927, 2013

4.   Amira A El Tayeb, Vikas Pareek, and Abdelaziz Araar.Applying association rules mining algorithms for trafficaccidents in dubai. International Journal of Soft Computingand Engineering, September 2015.

5.   William M Evanco. The potential impact of rural maydaysystems on vehicu- lar crash fatalities. Accident Analysis Prevention, 31(5):455462, September 1999.
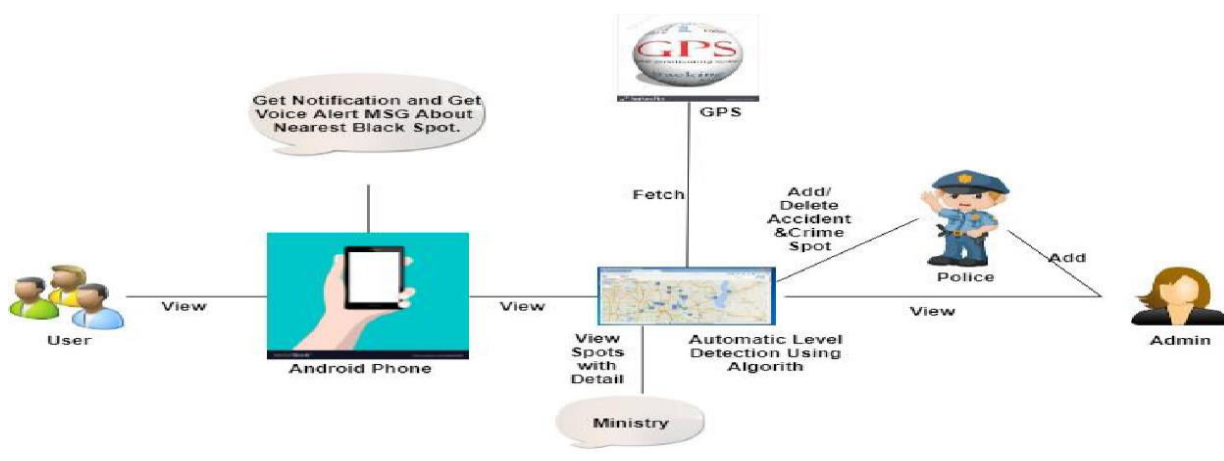
III. PROPOSED SYSTEM

Fig: Proposed System

The proposed system is discover the google map using web application from mobile. It can be devided into various module:

Admin:

Admin add the police admin, police admin can add all black spot like accident and crime location on map.

Police:

Police will integrate the black spot of accident's and crime's and the decide to level of crime and accident according to admin's police decided the danger level of that spot level wise. All spots are be declared as level wise like Level A, Level B, Level C. These levels are define by using Eclat Algorithm, using this algorithm the accident's and crime's spot will be define in above three level of dangerous zone from which people can be alerted and safely choose their path of travelling.

User:

User can integrate google map in their mobile with android application. After integrating google map user can see the accident and crime spot on that map, using these spots user can choose their root of traveling which is beneficial for them. In road travelling they also see the accident spot. All accident/crime spot are included by the police. Police added accident and crime black listed spot on integrated map which is help people to travel. If tourist or people reach on any accident or crime location and they use this android application then our proposed system send voice message to people and get alert them and send information about nearby black spot on which accident or crime which will held hence that spot is counted inblack list spots.

IV. CONCLUSION

In this study, the technique of association rules with a large set of accidents data to identify the reasons of road accidents were used. Analysis showed that producing the association rules, makes identification of factors involved in the accident that occur together, easier. It shares a lot in understanding the circumstances and causes of the accident. So the association rule mining gives the direction to deeper research on the causes of road accidents. It helps government to adapt the traffic safety policies with different types of accident and situations. The main result of this study is that although the characteristics of humanity and behavior are very important in occurrence of all road accidents but we can understand that spatial features and infrastructure play a major role in the accident. In this study it is tried to choose the interesting and superior rules to provide a lot of valuable information for policies to provide better safety policies. This article can be a step towards providing useful information for highway engineers and transportation designers to design safer roads.

REFERENCES

[1] Lih-Jen Kau, Chih-Sheng Chen, "A Smart Phone-Based Pocket Fall Accident Detection, Positioning, and Rescue System", IEEE Journal of Biomedical and Health Informatics, Vol. 19, No. 1, January 2015. [2] Bruno Fernandes, Vitor Gomes, Joaquim Ferreira and Arnaldo Oliveira, "Mobile Application for Automatic Accident Detection and Multimodal Alert", 2015 IEEE.

[3] Xiuquan Qiao, Wei Yu, Jinsong Zhang, Wei Tan, Jianchong Su, Wangli Xu, and Junliang Chen, "Recommending Nearby Strangers Instantly Based on Similar Check-In Behaviors",IEEE Transactions on Automation Science and Engineering, Vol. 12, No. 3, July 2015.

[4] Yunwoo Lee, Joonhwan Lee, Dongsoo S. Kim, Hyunseung Choo, "Energy-Efficient Adaptive Localization Middleware Based on GPS Embedded Sensors for Smart Mobiles"

[5] Juan Cheng, Xiang Chen, Minfen Shen, "A Framework for Daily Activity Monitoring and Fall Detection Based on Surface Electromyography and Accelerometer Signals", IEEE Journal of Biomedical and Health Informatics, Vol. 17, No. 1, January 2013

[6] Adel Rhuma, Miao Yu, and Jonathon Chambers, "Posture Recognition Based Fall Detection System", November 2013

[7] Lina Tong, Quanjun Song, Yunjian Ge, Ming Liu, "HMM-Based Human Fall Detection and Prediction Method Using Tri-Axial Accelerometer", IEEE Sensors Journal, Vol. 13, No. 5, May 2013

[8] Tal Shany, Stephen J. Redmond, Michael R. Narayanan, Nigel H. Lovell, "Sensors-Based Wearable Systems for Monitoring of Human Movement and Falls", IEEE Sensors Journal Vol. 12, No. 3, March 2012

[9] Jorge Zaldivar, Carlos T. Calafate, Juan Carlos Cano, Pietro Manzoni, "Providing Accident Detection in Vehicular Networks Through OBD-II Devices and Android-based Smartphone's", 2011 IEEE

[10] Qin Li-Jun, LV Yan, Zhang Li-Nan, CaiXu, "Evaluation of the Reliability of Bus Service Based on GPS and Smart Card Data", 2011 IEEE.

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