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Road Traffic Accidents Analysis in Mexico City through Crowdsourcing Data and Data Mining Techniques

Authors : Gabriela V. Angeles Perez, Jose Castillejos Lopez, Araceli L. Reyes Cabello, Emilio Bravo Grajales, Adriana Perez Espinosa, Jose L. Quiroz Fabian

Abstract : Road traffic accidents are among the principal causes of traffic congestion, causing human losses, damages to health and the environment, economic losses and material damages. Studies about traditional road traffic accidents in urban zones represents very high inversion of time and money, additionally, the result are not current. However, nowadays in many countries, the crowdsourced GPS based traffic and navigation apps have emerged as an important source of information to low cost to studies of road traffic accidents and urban congestion caused by them. In this article we identified the zones, roads and specific time in the CDMX in which the largest number of road traffic accidents are concentrated during 2016. We built a database compiling information obtained from the social network known as Waze. The methodology employed was Discovery of knowledge in the database (KDD) for the discovery of patterns in the accidents reports. Furthermore, using data mining techniques with the help of Weka. The selected algorithms was the Maximization of Expectations (EM) to obtain the number ideal of clusters for the data and k-means as a grouping method. Finally, the results were visualized with the Geographic Information System QGIS.

Keywords : data mining, k-means, road traffic accidents, Waze, Weka
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