MINING TECHNIQUES FOR ANALYZING THE NETWORK CORRELATION FOR DENSE ROAD TRAFFIC

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ABSTRACT

Safety for roadway traffic is a crucial role for vehicle organizations and transport agencies and also for each and every common man. Study and investigation is imperative to provide safe driving recommendations on the road traffic. In this paper we study and explore the statistical analysis on road network traffic. We would like to propose and explore the correlations among traffic conditions of different roads and propose a method that improves the complete traffic map from sparse traffic samplings. For the most part, it is complex to reveal the complicated road traffic affinities with direct lookup over the traffic information. Once extensive researching the correlations of road traffic is over, then we move to mathematical modeling and represent them with Multiple Linear Regression (MLR) model. The outcomes illustrates that the technique proficiently demonstrates the resultant road traffic correlations.

Keywords

Statistical Analysis, Dense Traffic Network, Multiple Linear Regression, Data Mining, Classification, Global Positioning System.

Introduction

Signals are playing the crucial role in monitoring the traffic at urban and metropolitan cities as the population is increasing day by day simultaneously the vehicles are increasing which causes the traffic jam. To resolve the problem and to identify the network at the particular places, people require notifying the traffic analysis and drivers status at the heavy traffic areas and also by notifying the traffic in the dense areas, we can also avoid the traffic jam, can control the number of accidents. Data mining techniques can be implemented for predicting about the traffic and can provide the statistics about the traffic situations at the meantime, thus the driver can get some idea and provide instructions for the driving at the dense road area.

The data can be captured by placing the cameras at dense traffic areas and also we can utilize the Artificial intelligence system by placing the Global positioning system to analyze and investigate the vehicles density at the various traffic areas by using the computing methods.

Data mining is the mechanism of studying hidden patterns of data based on different perspectives to classify useful information collected and gathered in general areas such as data warehousing, effective analysis, data mining algorithms, business decision-making and other information requirements to finally reduce costs and increase income. Data mining is also established as data exploration and expertise innovation. The compression algorithm is used to compress the location data of a group of moving objects as transmission is one of the most energy expensive tasks in WSN's.

Classification is a classic data mining function that classify items in a set of data into predefined set of categories or classes. The main goal of classification it to accurately predict the target class for each case in the data. Classification methods makes use of mathematical techniques like aive bayesian decision trees, statistics etc.

Literature Survey

Proposed that in data mining association rules and classification will play the crucial role at the environmental factors like road, weather, and light condition, whereas the factors of human beings are like being drunk or not, and the accident type, have stronger effect for predicting the fatal rate.

It mentions that their algorithm gives the assurance that it will access the real time data dynamically according with the changing situations in dense traffic areas and provides optimal prediction about the situation of the traffic and the traffic jam. They worked out on the real time environment and verified the efficiency of the algorithm.

It is used supervised data mining techniques like Classification, Random Forest, Naïve Bayesian etc. To forecast the next state of Traffic by a categorical traffic variable (level of service (LOS)) in different short-time intervals to expose situation of road traffic.

Proposed the application for Traffic for analyzing the patterns and behavioral models of time series data collected through sensors to the Directorate General of Spanish. These patterns are used to extract and notify the early traffic congestion.

It expressed the context information for surveillance of traffic jams, they video capturing for surveillance based on the video output they provided the prediction and detection of abnormalities about traffic affected areas. Their provided the experimental results for object detecting, classifying, tracking etc.

Related Work

In this paper, we would like to propose and explore the correlations among traffic conditions of different roads and propose a method that improves the complete traffic map from sparse traffic samplings. In most cases, the traffic condition of one road is not solely related to any particular individual road but several ones. The detailed traffic correlations among roads are non-trivial.

Different road segments impose different impacts on the local traffic, and some critical road segments may have impacts on the traffic conditions of many other road segments. Generally, it is not easy to reveal the complicated traffic affinities among road segments with straightforward lookup over the raw traffic data. After comprehensively investigating the traffic correlations, we turn to mathematical modeling and capture them with a Multiple Linear Regression (MLR) model.

The proposed system benefits in 3 ways:

(1) It implicitly indicates the set of key road segments in a road network which impact the overall traffic most.

(2) Based on the model we could form a representation space, which sparsely represents the traffic conditions of all roads in the road network. Unveiling the sparse property, hidden inside the raw traffic condition data, makes it possible

(3) The traffic conditions of the entire road network can be timely estimated by only sparse traffic sensing, leveraging the recent compressive sensing technique.

Conclusion

In this paper, our analysis provides an evaluation on traffic network, a compressive technique modus can be applied to achieve controlling or analyzing the city road transport through the simple traffic inquiries. On the other hand, for the analysis brawny correlations is most important, to identify the connections of road set from starting to ending with an undeniable portrayal even a thin point so that the network of the road traffic can be compare very clearly and unambiguously.

In this investigation and analysis, not only considering the network of the road traffic, also

considering and notifying the position and status of driver at the time of transport traffic.

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