IEEE Computer Society
SIG – Algorithms and Databases

Project : Data Analysis of accident prone areas

Aim : To alert the user of accident prone areas in a region

Abstract

Data Analysis is the process of inspecting, cleaning, transforming, and modeling data with the goal of discovering useful information, suggesting conclusions, and supporting decision-making.
Safety and security are of primary concern for any transport system. Our project involves collecting certain data pertaining to accident prone areas of a region and analyzing this data to alert the public by providing them a GPS indicator of these approaching areas.

Workflow

➔ Data Acquisition and cleanup
The first step involves acquiring data about accident prone areas. This data includes :
1. The area of risk, as well as the frequency and type of accidents in that region
2. The severity and number of fatalities

➔ Storage and Management
Novel tools such as NoSQL and MapReduce are bolstered by growth of global data and are used for storing our data.

➔ Analysis
We then analyze data using the following tools on the dataset collected :
1. Data Mining
2. Decision Tree
3. Data modelling
4. Id3 Tree Algorithm
5. Functional Tree Algorithm

➔ Visualization
Flexible visualization tools such as D3.js and Processing extract insight from data and easily integrate with existing frameworks.

➔ Communication
We communicate this analyzed data to the user via GPS indicators of the approaching accident prone regions.

Feasibility

Depending on available time, and with determined systematic approach, a final product and/or a research paper can be produced.

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