

# Accident Flagging and Route Suggestion Using Android Mobile Computing

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**Abstract:** Road accident is common nowadays. Throughout accident on road there's vast traffic. During this project, associate economical vehicle wireless system is intended and enforced for vehicle accident detection and reportage victimization measuring instrument, pressure sensing element and GPS. Measuring instrument sensing element and pressure sensing element is employed to find crash and GPS provide location of auto. just in case of any accident, the system send location to all or any user who uses this app. when obtaining notification user ready to see location on map and realize alternate path.

## 1. Introduction

Road accident is common nowadays. Throughout accident on road there's large traffic. Each day round the world, an outsized proportion of individuals die from traffic accident injuries. A good approach for reducing traffic fatalities is: initial building automatic traffic accident detection system, second, counsel alternate path to avoid traffic downside. Recent approaches area unit mistreatment integral vehicle automatic accident detection and notification system. Whereas these approaches work fine, they're overpriced, maintenance advanced task, and aren't on the market altogether cars. On the opposite hand, the flexibility to find traffic accidents mistreatment smartphones has solely recently become potential due to the advances within the process power and sensors deployed on smartphones. During this project, associate degree economical vehicle wireless system is meant and enforced for vehicle accident detection and coverage mistreatment measuring system, pressure detector and GPS. Measuring system detector and pressure detector is employed to find crash and GPS offer location of car. just in case of any accident, the system sends location to all or any users who uses this app. when obtaining notification user able to see location on map and notice alternate path.

## II.LITERATURE SURVEY

**2.1 Paper Name: Number of Registered Motor Vehicles in Bangladesh (Year-wise), Bangladesh**

**Road Transport Authority (BRTA), Dhaka, Bangladesh, May 2014, statistical summary. Accessed: 01 Jun. 2014.**

**Authors: Najiba Ahmadullah, Shahpar Islam and Tarem**

**Description:** Publications since the Bangladesh Road Transport Authority (BRTA) show that thirty nine thousand different vehicles were registered in March 2014, making you use around two million registered vehicles in the United Kingdom. This is mostly cited by road traffic management authorities in Bangladesh for perennial traffic congestions that plague many aspects of this heavily-populated nation. On the other hand, official Government of Bangladesh publications claim over 20 thousand kilometres of urban roads as well as over 100 thousand kilometres of country roads within the national transportation network.

**2.2 Paper Name: N. Yifeng, Traffic congestion in bangladeshs capital causes nearly 2.86 bln usd a year, Beijing, China, 03 Aug. 2010, online newspaper article. Accessed: 01 Jun.2014.**

**Authors: Najiba Ahmadullah, Shahpar Islam and Tarem Ahmed**

**Description:** Several schemes are already recently proposed to follow the path of a car or truck in tangible-time using existing mobile networks. However, most researchers target tracking their own vehicle only, with all the focus being security issues. We display the positions of most vehicles, with the objective of determining the optimum path to take to reach a destination making up traffic congestions along the way. We proposed a manuscript simple, inexpensive, elegant and light-weight system using signals from a Global System for Mobile Communications (GSM) cellular network.

**2.3 Paper Name: SJ. Lee, G. Tewolde, and J. Kwon, Design and implementation of vehicle tracking system using GPS/GSM/GPRS technology and smart-phone application, in IEEE World Forum on Internet of Things (WF-IoT), Seoul, Korea Republic, Mar. 2014.**

**Authors: Lee, G.Tewolde, J.Kwon**

**Description:** Vehicle tracking systems were first implemented for that shipping industry since people

planned to know where each vehicle 14 was at any moment. These days, however, with technology growing in a fast pace, automated vehicle tracking method is being used in many different methods to track and display vehicle locations in actual-time. In this paper authors proposes a car or truck tracking system by using GPS/GSM/GPRS technology as well as a Smartphone application to offer better service and expense effective solution for users.

**2.4 Paper Name: V. Pierlot and M. V. Droogenbroeck, A new three object triangulation algorithm for mobile robot positioning, IEEE Transactions on Robotics, vol. 30, no.3, pp. 566577, Jun. 2014.**

**Authors: Vincent Pierlot and Marc Van Droogenbroeck**

**Description:** Within this paper, we present an easy and new three object triangulation algorithm, named ToTal that natively works from the whole plane, as well as for any beacon ordering. We also provide a comprehensive comparison between many algorithms, and show our algorithm is quicker and much easier than comparable algorithms. In addition to its inherent efficiency, our algorithm offers a very beneficial and unique reliability measure that is assessable in the plane, which can be used to recognize pathological cases, or being a validation gate in Kalman filters.

**2.5 Paper Name: D. Bajaj and N. Gupta, GPS based automatic vehicle tracking using RFID, International Journal of Engineering and Innovative Technology, vol. 1, no. 1, pp. 3135, Jan. 2012.**

**Authors: D.Bajaj N.Gupta**

**Description:** A car vehicle tracking strategy is a digital device installed in the vehicle to enable the master or a 3rd party to follow the vehicle's location. The objects with the paper are: designing of an handheld remote control vehicle getting the facility of tracking location through GPS tracking detection of object to avoid collision. If you want to know where your automobile is, the routes and arrival use of your number of vehicle, if someone is abusing your vehicle or in order to protect your vehicle from thieves, a car tracking device can help you.

### III. PROPOSED SYSTEM

Now-a-days, there's sought after for automobiles, for this reason traffic control becomes hectic also it results in road accidents. We design and implement a process RTChoke that is made up of an Android application along with a back-end analyzer that will automatically detect and monitor congestion hotspots. Further, a light-weight decision tree that uses combining sensors is utilized to detect if the user is driving, to automatically trigger location

tracking using GPS files upload into a central server. The central server utilizes the information uploaded by different smartphones and detects hotspots. When accident happens from anywhere, there exists a problem of traffic jam for many hours.

Peoples are facing these complications on account of lack of early notification about these items; to lessen such problems proposed method is implemented. Thus giving notifications about accident for the Android phone users. We show the device could make accurate estimates of user commute times and suggest efficient alternate routes and commute start times, based only on information gathered with the hotspots, consuming only half battery power when compared with uniform monitoring tools including Google Maps.

### IV. SYSTEM ARCHITECTURE

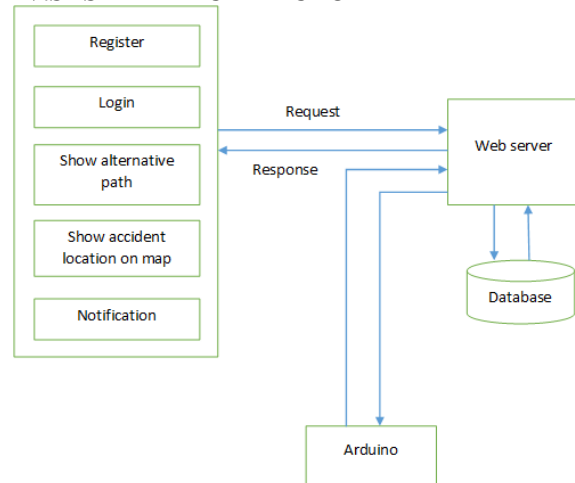


Figure 1. System Architecture of Proposed System

1. Registration and Login.
2. Accident detection using sensors Accelerometer, Pressure sensor etc.
3. Location of accident detect by GPS module in car.
4. If accident detect that information sent to other users who are using our android app and suggest different routes.
5. Generate red flag if accident was happened.
6. After 1 hour that flag will automatically disappear.

### 3.1 Outcome

It will detect accidents happened on the road via sensors. Then it will suggest the efficient route to the user to reach its destination.

### V. MATHEMATICAL MODEL

Input: Sensor Data detected by the sensors in the car

Output: Exact location of accident, Alternative path suggestion, information of road been clear after the accident.

Identify data structures, classes, divide and conquer strategies to exploit distributed/parallel/concurrent processing, constraints.

Functions: Identify Objects, Morphisms, Overloading in functions, Functional relations

Mathematical formulation:  $S = S, s, X, Y, T, f_{main}, DD, NDD, f_{friend}, \text{memory shared}, CPU_{count}$

S (system):- Is our proposed system which includes following tuple.

s (initial state at time T ) :-GUI of search engine. The GUI provides space to enter a query/input for user.

X (input to system):- Input Query. The user has to first enter the query. The query may be ambiguous or not. The query also represents what user wants to search.

Y (output of system) :- List of URLs with Snippets. User has to enter a query into search engine then search engine generates a result which contains relevant and irrelevant URL's and their snippets.

T (No. of steps to be performed) :- 6. These are the total number of steps required to process a query and generates results.

fmain(main algorithm) :- It contains Process P. Process P contains Input ,Output and subordinates functions. It shows how the query will be processed into different modules and how the results are generated.

DD (deterministic data):- It contains Database data. Here we have considered AD i.e. Accident Detection Database which contains number of ambiguous queries. Such queries are user for showing results.

Hence, AD is our DD.

NDD (non-deterministic data):- No. of input queries. In our system, user can enter numbers of queries so that we cannot judge how many queries user enters into single session. Hence, Number of Input queries are our NDD.

ffriend :- SV And SD. In our system, SV and SD are the friend functions of the main functions.

Memory shared: - Database. Database will store information like list of receivers, registration details and numbers of receivers. Since it is the only

memory shared in our system, we have included it in the memory shared.

CPUcount: - Two in our system, we require 1 CPU for server and minimum 1 CPU for client. Hence, CPUcount is 2.

Success Conditions: When the road is cleared within the expected time duration, when the data is flexibly published to all the users of the App.

Failure Conditions: Appropriate information not recognized by the sensors.

## VI.CONCLUSION

Incessant traffic jam is really a perennial overuse injury in many Asian metropolises. Most vehicle tracking devices utilize a Global Positioning System (GPS) to determine the location of the vehicle using satellite signals, and offer the shortest path approach to a destination using pre-loaded digital maps. GPS device, however, typically calculates shortest path in terms of physical distance travelled. We understand from experience the shortest path when it comes to distance may not be the quickest at a particular time of day as a consequence of traffic congestions down the path. Developing real-time, optimum vehicle routing systems that take vehicle traffic density on the highway has thus recently ended up being the focus a vast amount of research. As a result, we've developed "RouteFinder", a genuine-time, optimal vehicle routing system. RouteFinder is constructed using widely-available electronic parts, is inexpensive, has an easy-to-use interface around the driver's smartphone, and computes routes using signals from existing mobile phone networks. This really is when compared with most similar recent proposals which either use expensive components, delay-centric and error-prone communication with satellites, or let the tracking in the user's vehicle only. The machine plays a vital role in different ways thus it is usually applicable in numerous areas like vehicle positioning, accident detection and alternate path suggestion. The notification concerning the position of auto can be sent to any mobile terminal from android mobile. It is much more accurate, highly applicable and fewer complex. Our bodies shows that inside a traffic monitoring system built over sensors, automatically detecting and monitoring congestions can significantly reduce the overall overhead of the system, without compromising on the accuracy, compared, to a system with fine-grained periodic monitoring.

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