

Vehicle Tracking System using QR CODE and GPS

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Abstract - A user-friendly system for traffic police officers to detect suspicious vehicles to prevent unfriendly situations in crowd areas, social and religious places our system takes place the role to detect suspicious vehicle and to prevent and achieve safety of peoples. In this project we are introducing the smart vehicle detector android and GPS based system to detect such vehicles.

We are using QRcode scanner at public areas like fuel station, traffic signals, toll plazas and some govt. premises. So this scanner will detect the QRcode placed on vehicle and informs server about location of that vehicle using GPS. Also we provide a mobile application for govt. officers and traffic police officers to handheld device to scan vehicles nearby. Also we will integrate to the RTO database as a future scope. We are developing global portal for database on cloud and processing live data.

In this paper we have presented a method so that can read QRcode accurately using mobile phones which can be used in future. The poor quality of images due to improper resolution of mobile cameras, noise, non-uniform illumination and distortion of the camera makes the task difficult. Most of the techniques use for embedding image in QRcode for result QRcode.

Key Words: Data Mining, Keyword, Database, Security, Network, Cloud, AI

1. INTRODUCTION

QR code is a popular form of barcode pattern that is ubiquitously used to tag information to products or for linking advertisements. While, on one hand, it is essential to keep the patterns machine readable on the other hand, even small changes to the patterns can easily render them unreadable. A user-friendly system for traffic police officers to detect suspicious vehicles to prevent unfriendly situations in crowd areas, social and religious places our system takes place the role to detect suspicious vehicle and to prevent and achieve

safety of peoples. In this project we are introducing the smart vehicle detector android and GPS based system to detect such vehicles. We are using QRcode scanner at public areas like fuel station, traffic signals, toll plazas and some govt. premises. So this scanner will detect the QRcode placed on vehicle and informs server about location of that vehicle using GPS. Also we provide a mobile application for govt. officers and traffic police officers to handheld device to scan vehicles nearby. Also we will integrate to the RTO database as a future scope.

2. EXISTING SYSTEM

The setting used to generate a QR code consists of three parameters: data string, symbol version and error correction level. While the data string represents the encoded information that determines the appearance of QR code, symbol version and error correction level control the size and error correction capacity of QR code, respectively. The QRcode modules are black or white squares, and can be classified into two categories according to their functionality. The first category contains data modules, which are modules that represent input data or error correction codes; while, the second category are modules that are used to improve the reading performance (e.g., for alignment, rectification, etc.). Because the readability of QR code is very sensitive to the correctness of modules in the second category, our algorithm leaves these modules untouched and only manipulates the data modules. For each pattern, we introduce a novel term pattern reliability, which is modeled as a probability that a module's readability is not compromised by a pattern substitution, and is evaluated through a large database of synthetic QRcodes. Note that in absence of any analytic function quantifying readability of QR code under variations, pattern reliability characterizes the preference among patterns towards controllable levels of readability. While reliability prefers selection of high reliability patterns in order to maximize the readability of modules; regularization aims to control the appearance of modules via the target halftone image

using a similarity distance metric. We introduce a single control parameter to balance these two terms and solve the pattern assignment using a graph cut formulation.

3. ALGORITHM:

Data Algorithm : Clustering Algorithm (Data Mining) Clustering algorithm is an algorithm for finding the clusters between data sets in a BigData, which may represent, for example, vehicle type, user type, region type.

Algorithm Steps:

- Add data to server
- Get manual data
- Store on data server.
- Connect app server and data server
- Represent data as per user sort.
- Show clustered data.
- Apply the same algorithm again until user requirements

4. SYSTEM ARCHITECTURE:

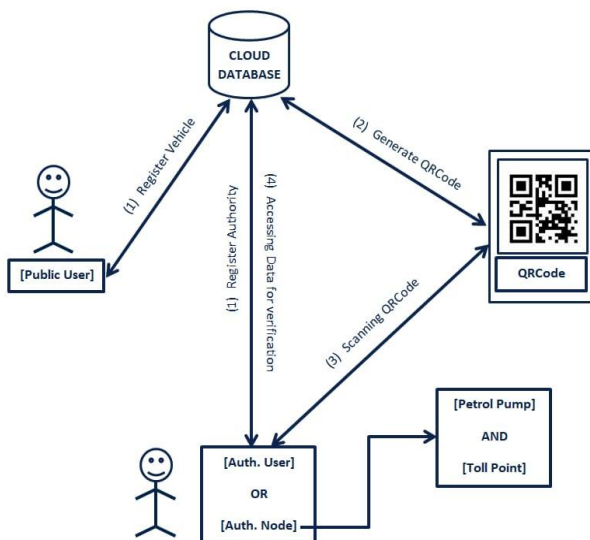


Fig -1: System Architecture

The present paper presents an in-vehicle application for traffic violation alert and management. At present, traffic violations are only focused on three signs: namely speed limit, stop sign, and forbidden turning. The application is designed to warn drivers about potential traffic violations by emitting acoustical messages through authorities. These messages are issued with sufficient notice to provide the driver with enough time to react to the oncoming traffic situation.

In order to evaluate the detected patterns are aggregated if they are spatially arranged with the components of a QR code symbol in a way that is geometrically consistent. For real-time applications implementation these results support which in mobile hardware assist visually impaired people and robots, through QR codes in multiple medium to the wealth of information available allowing them to have access.

5. SOFTWARE AND HARDWARE:

- Hardware
 - o Intel i5 processor
 - o 4 GB ram
 - o 500 GB HDD
- Software
 - o JDK 8
 - o NetBeans IDE
 - o MSSQL Server 2008 R2

6. ADVANTAGES

- ✓ Data Security
- ✓ Central Management
- ✓ Communication Security

7. CONCLUSIONS

This project includes study of encoding and decoding of QRCode by using various techniques. This application will detail the offence description, fine amount, user charges, and the total fine, violator's registration. In future scope more advance technique will be include in E-challan application for violators.

REFERENCES

1. O. Derbel and R. Landry, "Driver behavior assessment in case of critical driving situations," IEICE Transaction on Intelligent transportation system, vol. E100-A, no. 02, 2017.
2. G. T. Schmidt and R. E. Phillips, "Ins/gps integration architectures," Massachusetts Institute of Technology, Tech. Rep., 2010.
3. S. K. Junchuan Zhou and O. Loffeld, "Ins/gps tightly-coupled integration using adaptive uncented particle filter," The Journal of Navigation, vol. 63, no. 3, pp. 491-511, 2010.
4. P. D. Groves, Principles of GNSS, Inertial, and Multisensor Integrated Navigation Systems. Artech House, 2013.

5. X. Meng, K. Lee, and Y. Xu, "Human driving behavior recognition based on hidden markov models," in International Conference on Robotics and Biomimetics, 2006.

6. A. Shafer, A mathematical theory of evidence, Wiley, Ed. The Princeton University Press, 1976.

7. P. Dempster, "A generalisation of bayesian inference," The royal statistical society B, vol. 30, no. 2, pp. 205-247, 1968.

8. A. Martin and C. Osswald, Advances and Applications of DSMT for Information Fusion. American Research Press,, 2006, vol. 2, ch. A new generalization of the proportional conflict redistribution rule stable in terms of decision, pp. 66-88.

9. O. Derbel and R. Landry, "Driver behavior assessment based on the belief theory in the driver-vehicle-environment system," in 2015 IEEE International Conference on Vehicular Electronics and Safety (ICVES), 2015.