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Ensuring Trust Worthiness of Images on Vehicular Cloud

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Abstract

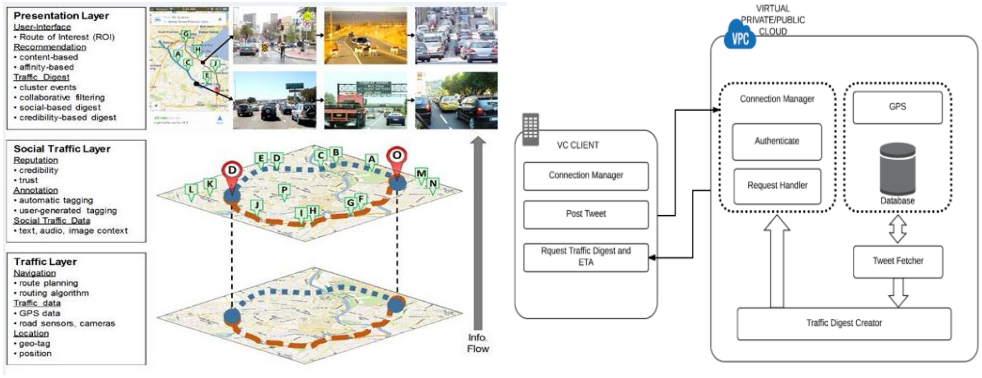
Many attempts where made for converting conventional cars to self-driving cars. For this purpose many sophisticated sensing devices where used such as cameras. By the advancement in technology vehicle gain ability to act as mobile sensors also technology are making vehicles equip with on-board computers, global positioning systems (GPSs), collision avoidance systems, and dashboard cameras. Ongoing attempts are made to avoid traffic congestion via smart cars use crowd sourced traffic data collected from GPS-equipped devices to determine traffic speed and identify traffic conditions.They used GPS system, vehicular cloud service, social vehicle navigation system and also geotagged traffic images. Additional features like Navitweets and Traffic digest where added to share information among the drivers. Crowd sourcing where used to obtain information. But main problem with the existing system is that while collecting the crowd sourced information they didn't check the trustworthiness of that information. We could ensure the trust of information by comparing the location information on the data and GPS coordinates of the user. We could also add additional features like credit points as incentives to encourage the users.

Keywords: Geotagged traffic images, Navitweets and Traffic digest

1. INTRODUCTION

Waze [1] is an example of a navigation app that functions by real-time traffic updates on traffic congestion which are becoming widely available and easily accessible via online maps, mobile phones, and GPS-equipped devices. Drivers route planning can be heavily influenced by such traffic information, which consequently leads them to

less congested routes. Such planning is done by selecting a route from a recommended list of alternative routes calculated based on factors like shortest Distance or estimated time of arrival (ETA), taking real-time traffic data into account. Use of geo-tagged traffic images, called NaviTweets, provided by the vehicular cloud to assist drivers in route planning and route decisions. They introduced a vehicular cloud service called Social Vehicular Navigation (SVN), which exploits the mobility of vehicles to expand coverage beyond the limited scope of static sensors, such as traffic cameras. Drivers who are planning a route can opt into the service and request images showing the traffc conditions on the alternative routes ahead. Other drivers whose vehicles are subscribed to the same service collaborate and share their sensing data by uploading NaviTweets concerning the current traffic conditions or any unexpected events.



2. EXISTING SYSTEM

Existing System uses navigation app that functions by pulling GPS data and, at the same time, providing an interface for drivers to push traffic conditions. Nowadays, real time traffic updates on traffic congestion are becoming widely available and easily accessible via online maps, mobile phones, and GPS equipped devices. Drivers route planning can be heavily influenced by such traffic information, which make them to choose less congested routes. Such planning is done by selecting a route from a recommended list of alternative routes calculated based on taking real-time traffic data into account factors like shortest distance or estimated time of arrival (ETA).ETA is the main deciding factor in route decisions, and this does not allow the design of vehicle navigation systems to consider other semantically rich information for decision making and improve satisfaction in the route decisions. For example, if a driver has information that an accident on a certain road will be cleared soon, the driver may choose to stay on the road. But the driver would certainly take a different route if the traffic jam is due to a long term lane closure.This type of traffic information about the road ahead in a timely fashion will reduce the stress and can improve the quality of the driving experience.

3. RELATED WORK

Alje van den Bosch et al. [2] proposed level of altruism can be used to reduce time delays on congested road networks using social navigation. Bilgin et al. [3] proposed road sign recognition system based on an embedded system that reads and recognizes speed signs. Thongsatapornwatana et al.[4] proposed Vehicular Security .They assures vehicular security through reputation and plausibility checks. This can address the main issue in VANETs ie, security. Eleonora D Andrea et al.[5] proposed real-time monitoring system for traffic event detection from Twitter stream analysis. Albert Alexe & R.Ezhilarasie [6] proposed Internet of Vehicles based on GPS technology. They used GSM and cloud computing infrastructure. Specialized embedded device, such as GPS device and GSM enabled device are fitted with vehicles .Wei Gao et al.[7] proposed Threshold-based Secure Message Verification in VANETs. In this, privacy is preserved by applying group signature. In case of false events, the proposed solution can trace back to the source vehicle which generates the message. Kalaivani.P and Senthil.M [8] proposed Optimal Vehicular Routing. In this paper, they collects various types of information like location, time slot and landmark.

4. PROPOSED SCHEME

Drawback of existing system is that while collecting information from the drivers it doesn't checks the trust worthy of that information. So we would like to add security features to ensure trust of the information collected from the drivers. This can be done by comparing GPS location of the user with the GPS information on the image or alert send by the users. Like any other crowd sourcing system, a suitable number of users is necessary for the system to work. Incentives for tweeters, such as creditpoints, can used, so that many users will contribute data, and the system will work.

5. CONCLUSION

For converting conventional cars to self-driving cars many sophisticated sensing devices where used such as cameras. Advancement in technology they used GPS system, vehicular cloud service, social vehicle navigation system and also geotagged traffic images. As vehicles gain the ability to act as mobile sensors that carry useful traffic information, people and vehicles are sharing sensing data to improve the driving experience. Existing system describes a vehicular cloud service for route planning, where users can share traffic images by using their vehicles on-board cameras. Existing system use the architecture of a traffic image sharing system called Social Vehicle Navigation (SVN), which allows drivers in the vehicular cloud to report and share visual traffic information called NaviTweets. A set of NaviTweets is then filtered, refined, and condensed into a concise, user-friendly snapshot summary of the route of interest, called a Traffic Digest. These digests can provide more pertinent and reliable information about the road situation and can complement predictions like estimated time of arrival, thereby supporting users route decision making. Drawback of this paper is that while collecting information from the drivers it doesn’t checks the trust worthy of that information. So I would like to add security

features to ensure trust of the information collected from the drivers. This can be done by comparing GPS information on the image with the GPS location of the user. Also we could include some mechanisms as incentives for tweeters, such as like credit points, our implementation to properly encourage drivers. Anybody could use this application who have on board cameras or smart phones to reach their destination through a safe and non obstacle paths.

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