"USAGE BASED VEHICLE INSURANCE"

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ABSTRACT: *Insurance On The Basis Of Driving Style (IOTBODS), which is an advanced product form in usage based insurance (UBI) for vehicle, takes driving habit and behavior into consideration in its actuary process. IOTBODS insurance product is supported by refinement and analysis based on raw driving data of insured vehicles, and the very analysis process, which is based on accelerometer data, helps to recognize the risk level of each driving behavior by finding the relationship between them. Even if studies on risk level determination have been done adequately, research on feedback and presenting of risk evaluation results for the drivers of insured vehicles have not been reported much. In propose system user will get the insurance on the basis of their driving style. If user drive vehicle without urgent breaking, harsh breaking, acceleration, rapid turn, sudden turn, cutting lane in speed i.e. rash driving; then user will get more benefits. If user do rash driving then user will get less benefits of insurance.*

***Keywords*:** *Insurance On The Basis Of Driving Style (IOTBODS), Usage Based Insurance (UBI)*

1. INTRODUCTION

The current pricing policy of automotive insurance companies around the world is based on traditional factors, such as age, location of residence, history of accidents and traffic violations. This means that all customers pay similar prices for similar factors, despite potentially large variations in their driving habits. The emerging telematics-based usage-based insurance (or pay-how-you-drive programs). Usage-based insurance (UBI) relies on the collection of each driver's data using various technologies (OBD-II, Smartphone, or Hybrid OBD-Smartphone) to calculate the risk score during a monitoring period, which can reflect the probability of getting involved in an accident. UBI provides a promising way to differentiate safe drivers from risky ones, which forms the basis for risk categorization and, thus, for subsequent discounts or surcharges on premiums depending on driving behavior. Propose system detect user location and the condition when actual accident occurred. In propose system, system can detect fraud insurance claim and authentic insurance claim. Authenticity of accident identify by accelerometer reading. system also poses capability to categories user driving style.

2. LITERATURE SURVEY

1)Speed-based Location Tracking in Usage-based Automotive Insurance: Usage-based Insurance (UBI) is regarded as a promising way to offer more accurate insurance premium by profiling driving behaviors. Compared with traditional insurance which considers drivers' history of accidents, traffic violations and etc., UBI focuses on driving data and can give a more reasonable insurance premium based on the current driving behaviors. Insurers use sensors in smartphone or vehicle to collect driving data (e.g. mileage, speed, hark braking) and compute a risk score based on these data to recalculate insurance premium. Many insurance programs, which are advertised as being privacy-preserving, do not directly use the GPS-based tracking, but it is not enough to protect driver's location privacy. In real world, many environment factors such as real-time traffic and traffic regulations can influence driving speed. These factors provide the side-channel information about the driving route, which can be exploited to infer the vehicle's trace. Based on the observation, we propose a novel speed-based trajectory inference algorithm which can track drivers only with the speed data and original location. We implement the attack on a public dataset in New Jersey. The evaluation results show that the attacker can recover the route with a high successful rate.

2) Smartphone-Based Measurement Systems for Road Vehicle Traffic Monitoring and Usage-Based Insurance: A framework is presented to deploy a smartphone-based measurement system for road vehicle traffic monitoring and usage-based insurance (UBI). Through the aid of a hierarchical model to modularize the description, the functionality is described as spanning from sensor-level functionality and technical specification to the topmost business model. The designer of a complex measurement system has to consider the full picture from low-level sensing, actuating, and wireless data transfer to the topmost level, including enticements for the individual smartphone owners, i.e., the end users who are the actual measurement probes. The measurement system provides two data streams: a primary stream to support road vehicle traffic

monitoring and a secondary stream to support the UBI program. The former activity has a clear value for a society and its inhabitants, as it may reduce congestion and environmental impacts. The latter data stream drives the business model and parts of the revenue streams, which ensure the funding of the total measurement system and create value for the end users, the service provider, and the insurance company. In addition to the presented framework, outcome from a measurement campaign is presented, including road vehicle traffic monitoring (primary data stream) and a commercial pilot of UBI based on the driver profiles (secondary data stream). The measurement system is believed to be sustainable due to the incitements offered to the individual end users, in terms of favorable pricing for the insurance premium. The measurement campaign itself is believed to have an interest in its own right, as it includes smartphone probing of road traffic with a number of probes in the vicinity of the current state of the art, given by the Berkeley Mobile Millennium Project. During the ten-month run of the project, some 4500-driving h/250 000 km of road vehicle traffic data was collected.

3) Joint Differentially Private Gale-Shapley Mechanisms for Location Privacy Protection in Mobile Traffic Offloading Systems: Being an important application of spectrum sharing in cellular networks, mobile traffic offloading which advocates third-party owners of network resource on unlicensed/licensed spectrum to share their spectrum and provide data offloading services, is considered as a promising solution to severe spectrum shortage faced by cellular network service providers. In this paper, we consider a general mobile traffic offloading system that adopts the widely-used Gale-Shapley algorithm to optimize its MUs-to-OSs (mobile phone users to offloading stations) allocation plan. We notice that without careful protection, such a system could cause serious threat to mobile phone users' location privacy, and thus design effective countermeasures based on the powerful, state-of-the-art differential privacy concept. Specifically, we have proposed two joint differentially private Gale-Shapley mechanisms with strong privacy protections for mobile traffic offloading systems. The first mechanism is able to protect each user's location privacy even when all other users collude against this user assuming the system administrator can be trusted. The second mechanism is able to achieve the same privacy guarantee against colluding users, and moreover against an untrusted, semi honest system administrator. We perform extensive experiments to evaluate our mechanisms, and results show our mechanisms have good efficiency, accuracy, and privacy protection.

4) Privacy-preserving Data Aggregation in Mobile Phone Sensing: Mobile phone sensing provides a promising paradigm for collecting sensing data and has been receiving increasing attention in recent years. Different from most existing works, which protect participants' privacy by hiding the content of their data and allow the aggregator to compute some simple aggregation functions, we propose a new approach to protect participants' privacy by delinking data from its sources. In particular, we first present an efficient protocol that allows an untrusted data aggregator to periodically collect sensed data from a group of mobile phone users without knowing which data belongs to which user. Assume there are n users in the group. Our protocol achieves "n-source anonymity" in the sense that the aggregator only learns that the source of a piece of data is one of the n users. Then, we consider a practical scenario where users may have different source anonymity requirements and provide a solution based on dividing users into groups. This solution optimizes the efficiency of data aggregation and meets all users' requirements at the same time.

5) PriPAYD: Privacy-Friendly Pay-As-You-Drive Insurance: Pay-As-You-Drive insurance schemes are establishing themselves as the future of car insurance. However, their current implementations, in which fine-grained location data are sent to insurers, entail a serious privacy risk. We present PriPAYD, a system where the premium calculations are performed locally in the vehicle, and only aggregated data are sent to the insurance company, without leaking location information. Our design is based on well-understood security techniques that ensure its correct functioning. We discuss the viability of PriPAYD in terms of cost, security, and ease of certification. We demonstrate that PriPAYD is possible through a proof-of-concept implementation that shows how privacy can be obtained at a very reasonable extra cost.

3. EXISTING SYSTEM

In exiting system user claim insurance after accident. As per repairing cost he/she get money. Disadvantages of existing system are:

- Users can claim fraud insurances.
- Users who follow all rules and maintain their vehicle can't get proper benefits of the insurance

4. PROPOSED SYSTEM

Each driving data recorded and store to database for evaluating and offering exact amount of insurance policy driving data like harsh breaking, accretion, lane cutting in speed will be collected using accelerometer and GPS location with incident date and time. This data is helpful to insurance company to calculate the risk analysis and chances of getting accident recovery claims. It will be also useful to verify accident incident information explain by consumer. Analysis data may be used for educating people about driving sense and analyzing driving behavior of the people.

5. ALGORITHM

The Knuth–Morris–Pratt string-searching algorithm (KMP algorithm) searches for occurrences of a "word" W within a main "text string" S by employing the observation that when a mismatch occurs, the word itself embodies sufficient information to determine where the next match could begin, thus bypassing re-examination of previously matched characters.

5.A Block Diagram

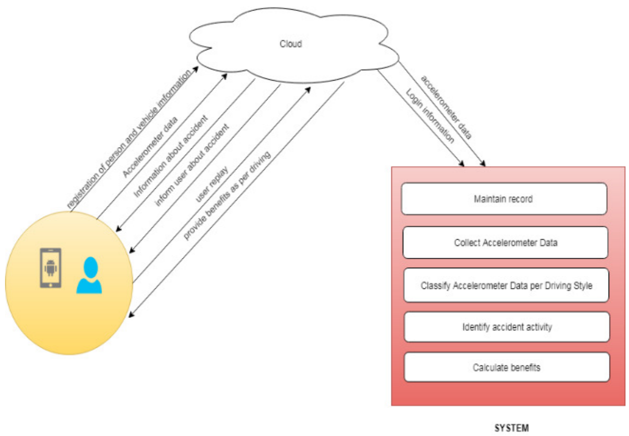

Figure 1: Block diagram

5.B Hardware Requirements

i.	System	:	Intel I3 Processor and above.
ii.	Hard Disk	:	20 GB.
iii.	Monitor	:	15 VGA Color.
iv.	Ram	:	4 GB.
v.	Mobile	:	Android
vi.	Mouse	:	Logitech

5.C Software Requirements

i.	Operating system	:	Windows 7 and above.
ii.	Coding Language	:	Java 1.8
iii.	Tool Kit	:	Android 2.3 and above
iv.	IDE	:	Android Studio
v.	Database	:	SQLite, MySQL

6. ADVANTAGES

i. Fraud insurance claim get eliminated
ii. Users driving style could be capture

7. APPLICATIONS

i. Applications such as characterizing driving styles or detecting dangerous events can be developed.
ii. Rash driving can be detected.
iii. Useful for finding location when user is using the system.
iv. Useful for all vehicle companies for providing relevant insurance

8. CONCLUSION & FUTURE SCOPE

This study provides road users with necessary information on motor insurance and its benefits. Although there are many people purchasing different types of insurance policies a few of them only fully aware of benefits of these policies. Insurance covers are something that one should be fully aware of. In general, the insurance policy provides protection against risk, loss and insecurity. The insurance industry in India has changed rapidly in the challenging economic environment throughout the world. In the current scenario, Indian insurance companies have become competitive in nature and are providing appropriate distribution channels to get the maximum benefit and serve customers in manifold ways.

The future growth of the insurance sector will depend on how effectively the insurers are able to come up with product designs suitable to our context and how effectively they are able to change the perceptions of the Indian consumers and make them aware of the insurable risks. The future growth of insurance also depends on how service-oriented insurers are going to be. On the demand side, the rise in incomes will trigger the growth of physical and financial assets. With the growth of infrastructure projects, the demand for insurance to cover the project and the risks during operations will increase.

9. MATHEMATICAL MODEL

Let S be the Whole system which consists:
S= {IP, Pro, OP}.

Where
A. IP is the input of the system.
B. Pro is the procedure applied to the system to process the given input.
C. OP is the output of the system.

A. Input:
IP = {I}.
Where,
I is set of images, provided as an input.

B. Procedure:
Step1: User has to do registration and login into the system.
Step 2: Verify the information into database.
Step 3: Extract the data of the vehicle.
Step 4: Proposed work deals with accelerometer data, latitude longitude (addressing data) using haversine algorithm.
Step 5: The methodology comprised of three phases, firstly user registers and logins.
Step 6: Driving data or information of the user driving is updated on the server.
Step 7: If accidents are claimed it can be checked by the various authorities.
Step8: As per the detailed information or driving data of the user the relevant insurance policy is provided.

C. Output:
Detection of accidents and claiming the insurance policy as per the users driving data

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