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KMP Based Learning License Assessment Using Accelerometer

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ABSTRACT: This study evaluated the impact of a proposed new practical driving test on learning to drive, test performance, and on post-test driving in GB. The new test was designed to promote a wider range of learning when learning to drive, and through this was designed to improve safety post-test

Learner drivers were recruited to the study through their driving instructors, and were pseudo-randomized to take either the existing test or the new test for license acquisition. They then completed surveys when they passed their test, and again at six months post-test .

The data also showed that being younger at test pass, and driving more, increased crash risk, confirming previous work in the area. No gender difference was apparent.

I. INTRODUCTION

Driving- and road safety are current and growing problems with global dimensions. According to the global status report on road safety conducted by the World Health Organization (WHO), 1.24 million traffic-related fatalities occur annually worldwide, currently the leading cause of death for people aged 15–29 years. As a result of the increased need for mobility in developing countries the continuous expansion of vehicle manufacturing is evident. The evolution of the global vehicle fleet causes an infrastructure backlog, which in turn is responsible for increased traffic safety risks and accident prevalence. Driver assistance and safety awareness programs have been an area of focus to minimize road safety incidents, and since the WHO launched their “Decade of Action in Road Safety (2011–2020)” program, a remarkable improvement in road safety has been noticeable. Despite the growth of 15% in the annual number of registered vehicles from 2007 to 2013, the annual fatalities remained stable in the region of 1.2 million over the same period. However, saturation in the number of fatalities is not good enough and a reduction should be observed instead. High priority is given to traffic safety improvements by government agencies and major automobile manufacturers across the globe to address this problem, and innovation in driver assistance is currently in demand.

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II. LITERATURE SURVEY

1.TITLE: Speed estimation and length based vehicle classification from freeway single-loop detectors

Published by: Benjamin Coifmana,b,* , SeoungBum Kim b

Roadway usage, particularly by large vehicles, is one of the fundamental factors determining the lifespan of highway infrastructure. Operating agencies typically employ expensive classification stations to monitor large vehicle usage. Meanwhile, single-loop detectors are the most common vehicle detector and many new, out-of-pavement detectors seek to replace loop detectors by emulating the operation of single-loop detectors. In either case, collecting reliable length data from these detectors has been considered impossible due to the noisy speed estimates provided by conventional data aggregation at single-loop detectors. This research refines non-conventional techniques for estimating speed at single-loop detectors, yielding estimates that approach the accuracy of a dual-loop detector's measurements. Employing these speed estimation advances, this research brings length based vehicle classification to single-loop detectors (and by extension, many of the emerging out-of-pavement detectors). The classification methodology is evaluated against concurrent measurements from video and dual-loop detectors. To capture higher truck volumes than empirically observed, a process of generating synthetic detector actuations is developed. By extending vehicle classification to single-loop detectors, this work leverages the existing investment deployed in single-loop detector count stations and real-time traffic management stations. The work also offers a viable treatment in the event that one of the loops in a dual-loop detector classification station fails and thus, also promises to improve the reliability of existing classification stations.

2.TITLE: Proposal a Vehicle Speed Measuring System Using Image Processing

Published BY: Yuji Goda, Lifeng Zhang, Seiichi Serikawa

This research proposes a new vehicle speed measuring approach based on image processing technique. This approach is aimed to improve the vehicle speed measuring accuracy at night. Ordinarily, it is difficult to take a clear image at night by using a low profile digital camera. Thus the image based vehicle speed measuring system for dark environment was not developed by now. In this research, the disadvantage of low profile camera is used for speed measuring. By controlling the shutter speed of camera, a bright line comes from the headlamp of a moving vehicle is appeared in the picture. In this work, an algorithm depend on this feature is developed. Experiment result shows a reasonable measuring value.

3.TITLE : Vehicle speed estimation by license plate detection and tracking,”

Published by: Diogo C. Luvizon, Bogdan T. Nassu and Rodrigo Minetto

The describe of novel system for vehicle speed estimation from videos captured in urban roadways. Our system uses text detection to locate the license plates of passing vehicles, which are then used to select stable features for tracking. The tracked features are then filtered and rectified for perspective distortion. Vehicle speed is estimated by comparing the trajectory of the tracked features to known real world measures. In experiments performed on videos captured under real operation conditions, our system attained a precision of 0.87 and a recall of 0.92 for license plate detection. Vehicle speeds were estimated with an average error of 0.59 km/h, staying inside the +2/-3 km/h limit, determined by regulatory authorities in several countries, in over 75% of the cases.

4.Tittle: Vehicle Detection And Speed Estimation With PIR Sensors,”

Published By: Brian Donovan University of Illinois 206 North Mathews Urbana, IL 61820 bpdonov2@illinois.edu
Yanning Li University of Illinois 206 North Mathews Urbana, IL 61820 yli171@illinois.edu
Raphael Stern University of Illinois

Reliable and accurate traffic sensing is the basis of Intelligent Transportation Systems (ITS), which mitigate traffic mobility and safety issues. To promote vast adoption of ITS technologies, rapid deployment and auto-calibration of traffic sensing systems are critical. Aiming at the development of an advanced traffic sensing system for construction zones, this poster presents our preliminary results for detecting vehicles and estimating traffic speeds by applying signal processing and machine learning techniques using Passive Infrared (PIR) sensor data.

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5. TITLE: A Novel Motion Plane-Based Approach to Vehicle Speed Estimation

Published by: Mahmoud Famouri, Zohreh Azimifar, *Member, IEEE*, and Alexander Wong

Speed limit violation by vehicles is one of the most frequent reasons for road crashes, which take the lives of many people every year, resulting in an increasing demand for video-based vehicle speed estimation systems. One of the biggest challenges to achieve monocular video-based vehicle speed estimation is the projection displacement difference (PDD) problem, where there is a plane disparity between street-level indicators and above-plane feature points of vehicles, thus resulting in unreliable speed estimates. In this paper, a novel motion plane-based approach for vehicle speed estimation is proposed, which addresses the problem of PDD. In the proposed method, we consider the center of a vehicle license plate as the vehicle reference point and estimate the hypothetical plane (named motion plane), on which license plate moves. Subsequently, the plate position is mapped on the motion plane and the displacement is then calculated, thus mitigating the effects of PDD. To estimate the motion plane, a texture-based shape-from-template technique is used. Unlike existing methods, the proposed method needs neither to apply any indicator nor to use any information about extrinsic parameters of the camera. Furthermore, since all the license plates are approximately located on a flat plane, the motion plane can be estimated by using several extracted 3-D points. Experimental results show that the proposed method performs better than the state-of-the-art vehicle speed estimation methods, illustrating the efficacy of this approach for achieving reliable vehicle speed estimation.

III. PURPOSE AND SCOPE OF DOCUMENT

The Driving License system aims to reduce the number of accidents and the thefts of cars by inserting a driving license in the vehicle's dashboard.

The scope of this system is to cross check the user to verify valid user & identify the capable user who can drive well.

IV. PROBLEM STATEMENT

Road accidents are increases in day today life. One of the causes of road accident is driver don't have proper driving skills. This problem could be solved by filter people at the time of requesting for driving license.

V. GOALS AND OBJECTIVES

Goal:

To avoid number of accidents by people who are unable to drive professionally. To setting up and configure a web-based system that is more practical driving license. To integrate between the web-based systems and mobile device through a logical link that enable communication among the 2 components.

Objective:

To assess the effectiveness of the RTO office system and to produce secure driving license system. The main objective of the driving license system is to avoid number of accidents by driver who are not able to drive professionally and to verify valid user information. Also To develop a driving school notification system that implements web-based and android technology to display related information and a reminder.

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VI. SYSTEM ARCHITECTURE

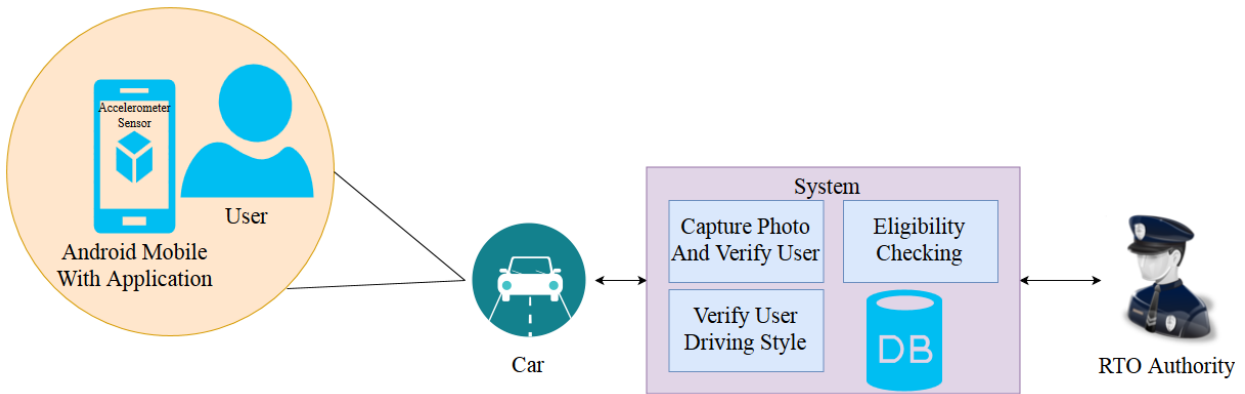


Fig1. System Architecture

This is a system architecture figure. The system architecture shows the whole explanation of the project means the which part does what work. The every project made before system architecture is important.

VII. ER-MODEL

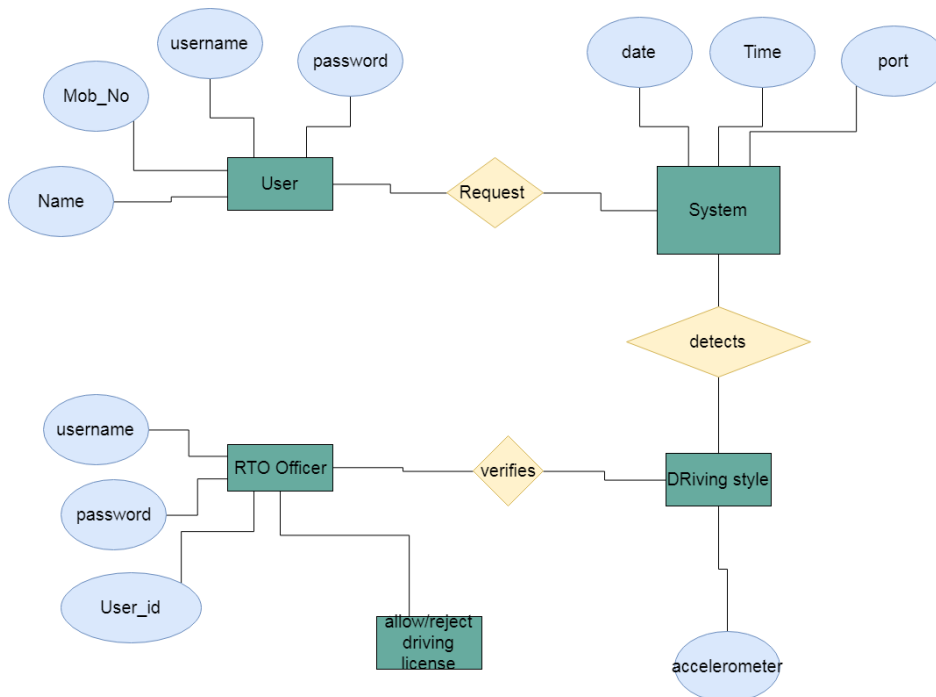


Fig2. ER-Model

This is an ER-Model Figure. This figure shows which part what work will do. Like RTO officer does the job to verify the user username, password and their id.

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VIII. USE CASE ARCHITECTURE

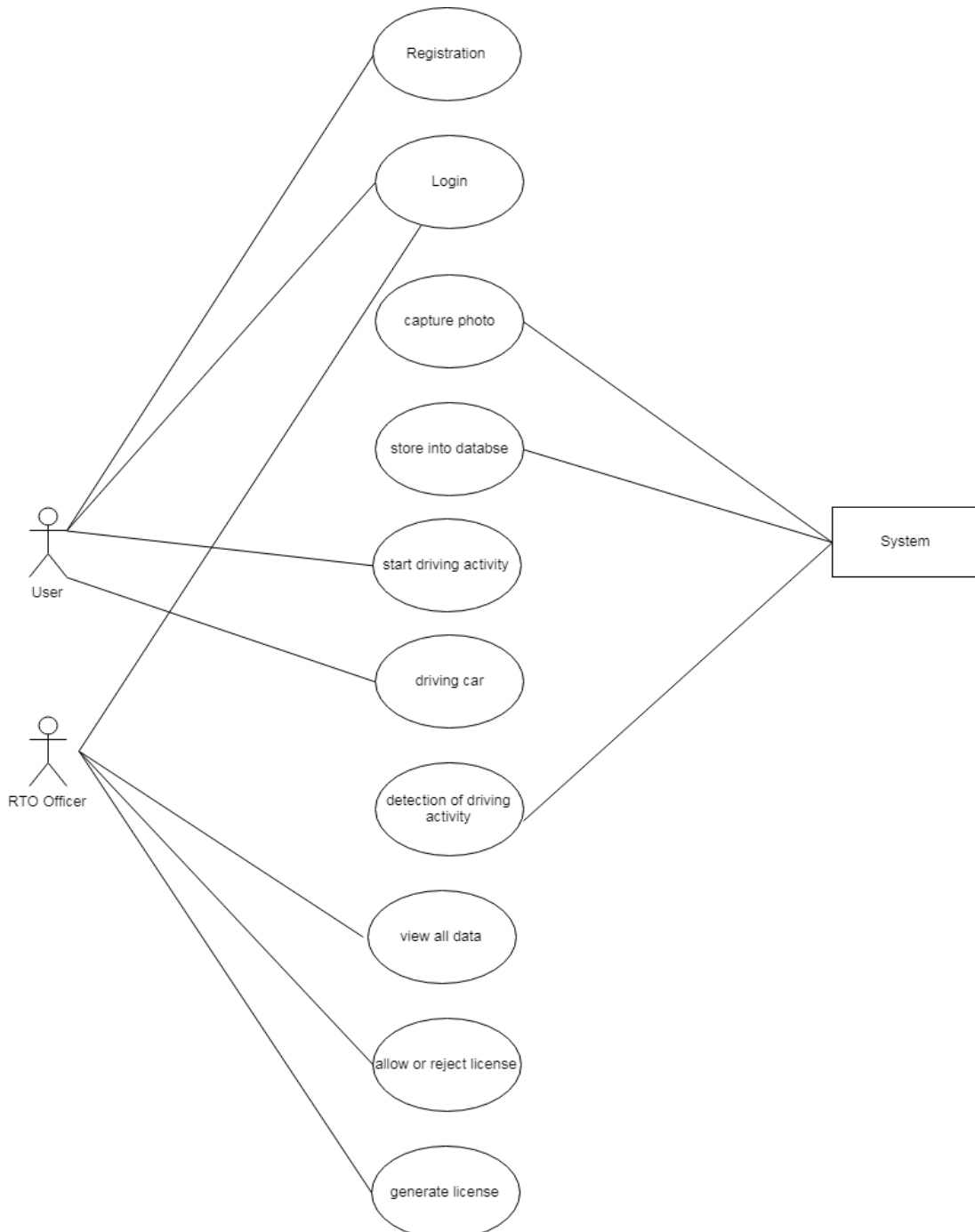


Fig3. Use Case

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This is an use case diagram to show which cases had to be used. The use case diagram diagram show virtual execution of the project.

IX. RESULT

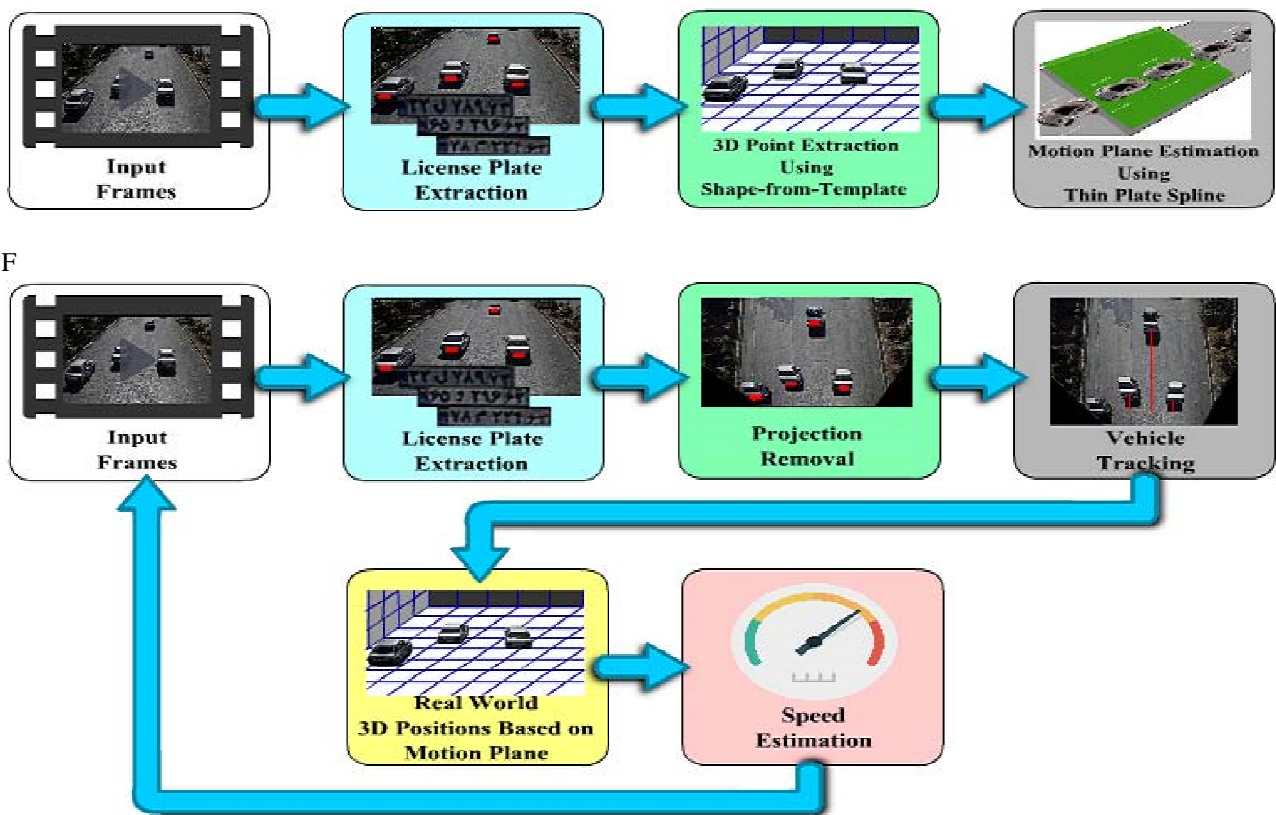


Fig4.Result

This figure shows how to work the android application. The sensor how to capture the speed of motor and their motion.

X. CONCLUSION

Road safety problems are a major area of concern in the transport industry especially in developing countries. Propose system allow RTO authority to force people to follow all RTO rules. System makes sure each and every permanent license holder user have driving perfection. And rules will apply equally on all the users.

XI. ACKNOWLEDGEMENT

It gives us great pleasure in presenting the preliminary project report on “KMP Based Learning License Assessment using Accelerometer”.

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