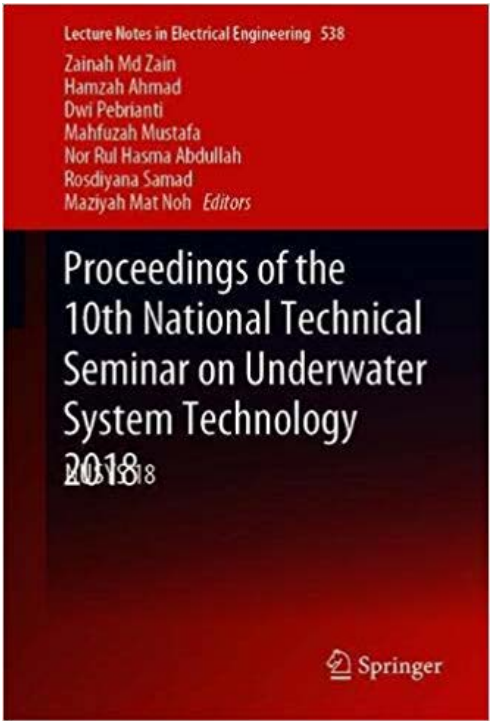

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Contents

IOT –EYE DROWSINESS DETECTION SYSTEM BY USING INTEL EDISON WITH GPS NAVIGATION

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Abstract. The number of traffic accidents continues to increase due to the driver's fatigue has become a serious problem to the society especially for the driver who drove for long distance. Technology in digital computer system allows us to create a drowsiness detection system. Studies for drowsiness detector system has focused on development of computer vision algorithm and lack of Internet of Things (IoT) and notification system, either awake or sleep or might involve in accident, and current location. Thus, we decide to develop a drowsiness detection system with notification of accident and the location by using Global Positioning System (GPS) navigation. In this system, if the driver's eyes are closed about more than 4 seconds, the driver consider as drowsy and an alarm system will be activated to warn the driver and notify the status and location to relative for further action via message (SMS).

Keywords— eye drowsiness,intel edison,GPS navigation,Iot, smartphone setup

1 Introduction

Nowadays, safe driving is a major concern of societies all over the world. The percentages of car accident also keep increasing year by year. Malaysia also has the highest road fatality risk (per 100,000 populations) among the ASEAN countries that cause by car accidents [1]. There are also some factors that contribute to the car accident which caused by the vehicle problem itself and human behavior. Drowsiness is one of the famous caused in Malaysia which the drivers falling asleep at the wheels.

Normally, after long hours of driving journey or in absent of alert mental state, the eyelids of driver will become heavy due to fatigue. The attention of driver starts to lose focus, and that creates risks for accidents. These are typical reactions of fatigue, which is very dangerous. Usually many exhausted drivers are not aware that they are falling asleep even for a moment (microsleep). Unfortunately, accident might happen anytime, less than one second. Besides, there are cases of death due to the absence of rescue. No report and emergency call to authorize person due to unknown occurrence and location of the accident by people around there [2][3]. As a result, injuries become worse and the chances to death are increase.

Therefore, it is essential to develop a real-time safety system for drowsiness detection system which able to monitor eye condition and notify responsible person (relatives/parent) by sending message and current location that the driver might get into accident. Fast action could be taken to save golden lives of the accident victims, even for a few second. By leverage the advancement of internet and communication tech-