DESIGN OF DRIVER MONITORING SYSTEM TOOL USING RASPBERRY PI
(CASE STUDY OF PT BERAU COAL)

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ABSTRACT

The Driver Monitoring System is a technology as a driver's supervisor in driving a vehicle, which aims to monitor the level of driver fatigue, which in this study detects sleepiness of the eyes and yawning mouth. Fatigue is a body's protective mechanism so that the body avoids further damage so that recovery occurs after rest. The cause of work fatigue is usually marked by several internal and external factors, such as the influence of age, years of service, length of work, and noise. Fatigue usually shows a different condition from each individual, but all of them lead to a loss of efficiency and a decrease in work capacity and body resistance. This detection will be able to reduce the number of accidents. Factors that occur due to fatigue, negligence which resulted in a fatal accident can even take a life. In this study, the system algorithm uses the Haarcascade Classifier method in order to detect the face as a whole and the Facial Landmark Detection method which can detect eye and mouth movements in real time. After that, the webcam system will take all the driver's movements in one frame, if the driver is indicated to close his eyes and yawn, the warning system sounds through the speaker. The system will also capture the screen automatically according to the violation. This system is also added with a pulse sensor which aims to detect the driver's pulse. The results of the data from the system will be displayed on the website dashboard for easy data management.

Keywords: Driver Monitoring System, Sleepy Eyes, Yawning, Haar Cascade Classifier, Facial Landmark Detection.