

UNIVERSITI TEKNOLOGI MARA

**NEXT-GENERATION DASHCAM USING IOT
TECHNOLOGY**

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ABSTRACT

Driving has become a part of nowadays daily activities, whether it is to go to work or going to the mall to buy some things, or just wanting to go to other places. Responsibilities are shared among all the drivers on the road, so it is a given for all of us to make sure that the road is safe and smooth. But nowadays, there have been more cases of road accidents. One of the ways for driver to keep themselves and their vehicle safer is by using Dashboard Camera. Next-Generation Dashcam Using IoT Technology is an IoT system that send emergency alerts to the first responder for fast and quick respond on emergency situations. The system records videos through a vehicle dashboard camera, and then save it to a cloud storage, then when an emergency occurs such as an accident, this project uses raspberry pi with camera module, and GPS module to create the dashcam system, this project capable of recording video and sending it to the server, send an alert to a Telegram bot with the device's latitude and longitude coordinate, and sending a livestream link to the Telegram bot. Although there is a problem that occurred during the development which related to the project's hardware being low spec, making it run out of memory when using two camera functions and taking a long time to boot up the GPS module. The project has still successfully been developed and met all its objectives and requirements.

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CHAPTER 1

INTRODUCTION

1.1 Background Study

In 2004, road traffic injuries are recorded as the ninth most frequent cause of death, over 1.2 million people die on the road each year, with 20 to 50 million suffering from non-fatal injuries (Milton Lum, 2019). Based on Index of Accidental Road Death, Index of deaths in Malaysia from 2011 to 2016 are 6,877 deaths in 2011, 6,917 deaths in 2012, 6,915 deaths in 2013, 6,674 deaths in 2014, 6,706 death in 2015 and 7,152 death in 2016. based on the index, the is a slight decrease from 2011 to 2015 but then increased in 2015, and then the index rocketed in 2016 where the number of accident and death increase significantly. There are a lot of causes that lead to road accident, which is vehicles following the front vehicles too closely, dangerous cornering, dangerous overtaking and over speeding. According to a study from Alliance of Safety Community (Lee Lam Thye, 2020) said by Malaysian Institute of Road Safety Research (MIROS) revealed that 85% of road accidents were due to reckless driving.

As it is hard to control all the reckless driver throughout the country, people have tried many ways to reduce and control the amount of road accident, CCTV, Traffic Enforcement Camera, those can record the incident that happened within the area that it is install. As for a more convenience and closer medium, driver can user dashboard camera that they can install inside their cars. For this project, we focus on dashboard camera as it is the closest and easiest evidence that a driver can obtain immediately. Nowadays, most of the people that owns a car, will own a dashcam, if not, they will be advised to install one because dashcam can provide security for the driver, not only that, but it can also provide evidence if needed.