

**AUTOMATIC DETECTION AND NOTIFICATION
OF POTHoles AND HUMPS ON ROADS TO AID
DRIVERS**

Technofist,

YES Complex, 19/3&4, 2nd Floor, Dinnur Main Road, R.T.Nagar, Bangalore-560032

Ph: 080-40969981, Website: www.technofist.com. E-mail: technofist.projects@gmail.com

ABSTRACT

India, the second most populous Country in the world and a fast growing economy, is known to have a gigantic network of roads. Roads are the dominant means of transportation in India today. They carry almost 90 percent of country's passenger traffic and 65 percent of its freight. However, most of the roads in india are narrow and congested with poor surface quality and road maintenance needs are not satisfactorily met.

Roads in India normally have speed breakers so that the vehicle's speed can be controlled to avoid accidents. However, these speed breakers are unevenly distributed with uneven and unscientific heights. Potholes, formed due to heavy rains and movement of heavy vehicles, also become a major reason for traumatic accidents and loss of human lives. To address the above mentioned problems, a

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cost effective solution is needed that collects the information about the severity of potholes and humps and also helps drivers to drive safely. With the proposed system an attempt has been made to endorse drivers to ward off the accidents caused due to potholes and raised humps.

INTRODUCTION

One of the major problems in developing countries is maintenance of roads. Well maintained roads contribute a major portion to the country's economy. Identification of pavement distress such as potholes and humps not only helps drivers to avoid accidents or vehicle damages but also helps authorities to maintain roads. This paper discusses previous pothole detection methods that have been developed and proposes a cost effective solution to identify potholes and

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humps on roads and provide timely alerts to drivers to avoid accidents or vehicle damages.

Ultrasonic sensors are used to identify potholes and also to measure their depth and height respectively. RF transmitters are placed on the road where there is an hump and RF receivers are placed inside the car whenever there is a hump the RF receiver will receive the signal and will alert the driver through Buzzer and LCD display. The proposed system sends the information to the cloud through WIFI and this data can be accessible on Blynk installed on the Android smart phone. The sensed-data includes pothole depth, height of hump which is sent to the server (Mobile) via WIFI. Then this data is stored in the database (Mobile). This serves as a valuable source of information to the Government authorities and to vehicle drivers. The whenever there is any pothole or hump on the road the sensors will sense this and instantaneously the buzzer gets activated and will be displayed on the LCD to alert the

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driver so that precautionary measures can be taken to evade accidents.

The model proposed in this project serves 2 important purposes; automatic detection of potholes and humps and alerting vehicle drivers to evade potential accidents. The proposed approach is an economic solution for detection of dreadful potholes and uneven humps, as it uses low cost ultrasonic sensors. The mobile application used in this system is an additional advantage as it provides timely alerts about potholes and humps.

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