

An Anthology of Applied Computer Technologies

Zulkefli Muhammed Yusof
M.M Hafizur Rahman



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Editors

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3. ANALYZING DRIVING BEHAVIOUR USING SPEECH RECOGNITION THROUGH KDE AND MLP

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ABSTRACT

The road accidents have been increasing day by day. Researchers have stated that driver behavior is the major key factor of accident. Human behaviours are mainly influence by emotions while emotions are express via speeches. This paper is about speech emotion recognition and the correlation between speech emotion and driver behaviour. We used data corpus that contain emotional speech from different drivers. For validation purpose, we have conducted a survey from 40 respondents to verify the emotion from the data corpus. Then, we use GoldWave software as the audio editor and MATLAB as the tool for analyzed speech emotion recognition. By using MATLAB we use Kernel Density Estimation (KDE) and Multilayer perception (MLP) as a method to analyze the speech emotion.

3.1 INTRODUCTION

Research indicates driver behaviour as one of the contributing factors in 40-60 percent of all crashes, causing an estimated 4,000 to 8,000 traffic crashes each day. Driver behaviours come in many forms, from talking or texting on a cell phone, fatigue, stress, drowsy or under alcoholic influence.

Statistics show that traffic accidents in Malaysia have been increasing at the average rate of 9.7% per annum over the last three (3) decades.