

Research Proposal

Title of the Proposal

A Novel Approach for Intelligent Distracted Driver Detection Mechanism for Enhancing Automotive Security Using Machine Learning Techniques

Introduction

The global epidemic of road crash fatalities and disabilities is gradually being recognized as a major public health concern. Nearly 1.25 million people die in road crashes each year, on average 3287 deaths in day. An additional 20-50 millions are injured or disabled. More than half of all road traffic deaths occur among young adults ages 18-44. Road traffic crashes rank as the 9th leading cause of death and account for 2.2% of all deaths globally. Each year nearly 400000 people under age 25 die on the world's road, on average over 1000 a day. Over 90% of all road fatalities occur in low and middle income countries, which have less than half of the world's vehicle.

Distracted driving is the number one cause of car accidents in the world, resulting in more crashes every year than speeding, drunk driving, and other major accident causes. Drivers can become distracted behind the wheel for a variety of reasons. A driver is considered to be distracted when there is an activity that attracts his/her attention away from the task of driving. The three types of driving distractions manual distraction, visual distraction, cognitive distraction. Manual distraction occurs when the driver takes his/her hands off the wheel e.g., drinking, eating, etc. Visual distraction happens when the driver looks away from the road, e.g., reading, watching the phone, etc. Cognitive distraction is the situation when the driver's mind is not fully focused on the driving task, e.g., talking, thinking, etc.

The various type of distraction may include using mobile phones, drinking, eating, reaching to back, changing the radio station, using a gps, drowsiness, talking with passengers, sleeping, makeup and looking at the scenery. Evidence show that drivers whose attention is diverted away from the driving task for more than 2 seconds at a time are at increased risk of a crash. Government has implemented several laws to control such type of distracted driving. Smartphone use or texting while driving is a primary offense. It may lead to have fine or send to jail if they are caught. But we know that it is not possible to outlaw all of this.

So with the aim to reduce such accidents and to improve safe driving culture a proposal is submitted hereby to identify and alarm distracted driving.

