Development of a driving VR prototype for distraction awareness employing eye tracking

Publisher: IEEE

Robin Blanco ; Juan Calle ; Alvaro Uribe-Quevedo All Authors

Abstract: According to the World Health Organization, car accidents are amongst the top ten worldwide causes of death as a result of speeding, driving while under the influence of ... **View more**

Metadata

Abstract:

According to the World Health Organization, car accidents are amongst the top ten worldwide causes of death as a result of speeding, driving while under the influence of alcohol or other psychoactive substances, non-use of safety restraints, and distractions. The current appropriation and impact of mobile devices are changing how people perform daily activities, which is leading to distractions that are increasing the risk of traffic accidents. Attention skills play an important role while driving and have become a field of study that is employing professional driving simulators to create awareness amongst drivers about the dangers of distractions. However, high-end simulators are not available to the general population due to costs and technical requirements, and often used in industry and research. In this paper, we present the development of a virtual simulator that employs consumer grade eye-tracking for measuring attention during driving while receiving incoming calls and texts on a mobile device. The eye tracking metrics provide gaze data that allows determining what caused a distraction during the simulation.

Published in: 2017 IEEE 6th Global Conference on Consumer Electronics (GCCE)

Date of Conference: 24-27 October 2017

DOI: 10.1109/GCCE.2017.8229447

Date Added to IEEE *Xplore*: 21 December 2017

Publisher: IEEE

ISBN Information:

Conference Location: Nagoya, Japan

Contents

I. Introduction

According to the World Health Organization (WHO), driving accidents result in nearly 1.3 million deaths in road crashes each year, costing an estimate of USD $518 billion globally, ranking as the ninth leading cause of worldwide death [1]. The WHO has identified speeding, driving while the influence of alcohol and other psychoactive substances, non-use of safety restraints, and distractions as the main causes for road accidents. However, accidents caused by mobile device distractions are rising by causing slow reaction times, making it difficult to focus on the elements in the road, and decreasing the awareness required to keep proper distances [1].

Sign in to Continue Reading

Authors

Figures

References

Citations

Keywords

Metrics

Footnotes

More Like This

Data Visualization and Machine Learning Approach for Analyzing Severity of Road Accidents
2022 International Conference for Advancement in Technology (ICONAT)
Published: 2022

A study on the road accidents using data investigation and visualization in Los Baños, Laguna, Philippines
2018 International Conference on Information and Communications Technology (ICOIACT)
Published: 2018

Show More