SIMURIDE Driving Simulator Software

Phillip Hall
Department of Computer Science
North Carolina A&T State University
Greensboro NC, 27401

Pjhall06@gmail.com

ABSTRACT

For the past few years, the issue of distractive driving has had a major impact on our society, and has gained major attention from the public and policy makers. Operating a handheld device, having a conversation with a passenger, or just adjusting the radio, all can possibly result in dangerous circumstances. In the Human-Centered Computing Lab (HCCL) Simuride is a driving simulator software used to examine different types of distractions and their effect on drivers. For test matters, the simulator provides us with an accurate measurement of these effects, using different applications that were created in the HCC Lab.

Keywords

SimuRide Simulator Software, voiceTEXT, iTech, iCar

1. INTRODUCTION

The SimuRide Software is a reliable simulator system that gives the user the feel that is very close to a real life driving environment. This research focuses on many of the distractions that are taken for granted when driving. With all the advanced features that the simulator provides these distractions are able to be critically examined. The simplest obstacle or distraction can be a life or death situation for example if one was to take his or her eyes off of the road for 10 seconds going at 50 mph they have driven the length of a football field. With all the controversy involving the topic of texting while driving or just using a cell phone while driving, studies need to be done to measure how much using these devices really affect drivers. Previous studies have been done with driving simulators, such as texting while driving, Pre-Crash tests, and of course operating different devices while driving. The HCC Lab wants to examine how effective it is to use a tool used to that allows a person

to send hands-free-eyes free messages, and also test a program develop that allows a voice activated car manual while driving.
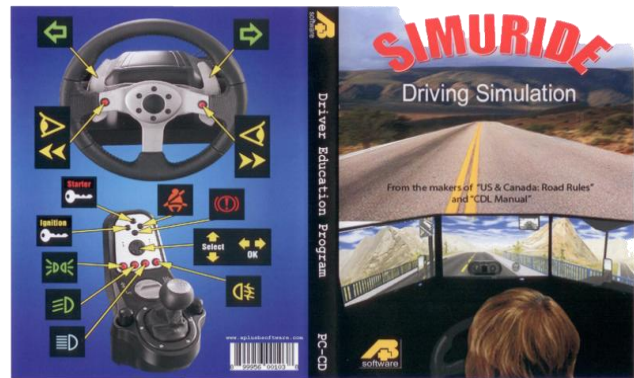
2. ABOUT THE SYSTEM

- 12 different driving terrains that range from driving in an empty urban setting with signs and places to practice parking, to mazes and high traffic urban areas or curvy road areas similar to how it is in the real world.
- Different weather settings can be applied
- Choose from a number of different vehicles(cars, bus or semi truck) with either manual or automatic transmission.
- Adjust the different settings to allow for best video quality and performance , depending on the machine running the simulator software.
- It is ran with a g27 Logitech racing wheel, and gives the function of each button on the wheel.
- Different messages appear while driving the simulator if the user breaks any driving rules or doesn't take the proper precautions while driving (ex: not putting on a seatbelt)
- It is a virtual world with different terrains. The user can drive in a city with lots of buildings, or drive in a "country" area with lots of curves, or on a highway.

3. FUTURE RESEARCH PLANS

Applications such as voiceTEXT and iTech will help perform different studies. Itech gives a user the opportunity to ask any question about the vehicle to the vehicle in a natural manner. The system will respond through the car speakers, answering the question and referring the right page in the car manual. VoiceTEXT is a tool that sends voice messages instantly over a mobile phone line, hands-free-eyes-free. Studies have shown that talking on the phone while driving is very distracting due to the cognitive load in the driver's brain. Talking to your phone, which voiceTEXT allows, has proven to be less distracting since it is a means of asynchronous communication (Bruyas, Brusque, Debailleux, and Aillerie 13). In the future, the iCar study will be used to measure the distractions of using handheld devices such as phones or ipods, and even in car conversations and verbal mind games.

4. CONCLUSION

In the near future, the Simuride driving simulator will be very useful for research involving automobiles. It is very accurate and flexible to help us with diversity within the study. Its design gives the user a real feel to driving an actual vehicle.

6. REFERENCES

[1] Bruyas, Marie-Pierre, Corinne Brusque, Sandrine Debailleux, and Isabelle Aillerie. "Transportation Research Part F." Does making a conversation asynchronous reduce the negative impact of phone call on driving?. 12.1 (2009): 1-98. Print.