



COLLEGE of ENGINEERING AND PHYSICAL SCIENCES

SCHOOL OF COMPUTER SCIENCE

MSc Defence

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Analysis of Distracted Driver Behaviour Using Self Organizing Maps

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Abstract

Driving can be a complicated process, but with sufficient practice, it becomes surprisingly more easier. People tend to forget that even the smallest distractions can have great consequences. Nowadays, experienced drivers are skilled enough to perform multiple tasks like listening to music or texting while simultaneously concentrating on driving. This thesis studies driving under different distractions and how they affect different drivers. The behaviour of individual drivers are also studied to make conclusions on how distractions affect drivers.

To understand a driver's behaviour, their driving patterns are studied by constructing Self Organizing Maps and training them on the drivers' datasets. This results in a structure that maps each driver under a particular distraction to their behaviour. The map is then studied by developing labels based on the features of the datasets. These labels serve as test cases to examine different behaviour of each driver, from which conclusions regarding the disruptiveness of each distraction.