UNIVERSITY of GUELPH

COLLEGE of ENGINEERING AND PHYSICAL SCIENCES

SCHOOL OF COMPUTER SCIENCE

MSc Seminar

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Identification of Driver Types Using Drive Lab Data

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ABSTRACT:

Drivers with different personalities and driving skill can demonstrate an aggressive or cautious trend while driving. The goal of this study is to identify different driver types based on the data from the Guelph Drive Lab. Identifying different driving styles will help with the design of in-vehicle aids and displays and with the next generation of semi-autonomous vehicle systems. When participants are driving in the simulator, data is recorded such as brake pressure, tangential speed, headway, tangential acceleration, etc. When labeling driving skill, we focused on the type of their license, distance driven each day, and frequency of driving during the week. Based on these factors, participants were assigned into three different groups: newbie group, normal group and master group. In order to estimate individual differences, Sustained Attention to Response Task (SART) and Operation Span (OSPAN) were used as a reference. Participants with high SART score should be less likely to experience mind wondering and those who scored high on the OSPAN task should be able to better coordinate a secondary task. Finally, an unsupervised clustering technique was applied to our drive and personal data. Aggressive, normal, and cautious drivers were identified. Further study with supervised learning techniques is planned.