

Supervisor assessment of Bachelor's Thesis

Student: Blašková Barbora
Title: Driver State Monitoring (id 22719)
Supervisor: Chudý Peter, doc. Ing., Ph.D. MBA, DCGM FIT BUT

1. Assignment comments

The aim of the thesis was to utilize state-of-the-art machine learning techniques to design and implement a driver state monitor/estimator using physiological indicators of stress/arousal augmented by the automobile state data. The non-trivial nature came from the complexity of the machine learning task itself and the limited availability of content rich and meaningfully labeled datasets. Utilization of the real world measurements imposed additional requirement on data preprocessing to verify its consistency. The idea was to explore driver model composition options and to test hypothesis on the scalability of the selected design approach. The work contributes to the currently researched topics in human behavior modeling under the framework of the National Centre of Competence in Aeronautics and Space. Based on the previous conditions I consider the overall difficulty to be above average.

2. Literature usage

The author worked successfully with a portfolio of topic relevant references and performed a tailored research on driver modeling using kinematic and physiological data, and employing machine learning for arousal classification. The author successfully mastered utilization of published resources to design a driver arousal estimator/monitor.

3. Assignment activity, consultation, communication

The author demonstrated a high level of commitment in achieving convincing results. The author attended scheduled meetings regularly and always well prepared. The author meaningfully contributed to the meeting discussions, while demonstrating the ability to draw individual conclusions and transforming them into a working designs. Communication with the author was conclusive and punctual.

4. Assignment finalisation

Both, the text of the thesis and the implementation part have been finished in advance of the deadline and the content examined. The author provided the thesis in a format which did not require almost any additional adjustments.

5. Publications, awards

Unknown

6. Total assessment

excellent (A)

The student's overall activity, critical thinking, commitment and motivation to professionally deliver a consistent and well balanced thesis were exceptional. The author provided results not only to the originally assigned task, but chose to explore further hypothesis which emerged during her work. Achieved results form a good starting point for future machine learning backed research on human driver behavior states. The amount of demonstrated knowledge, enthusiasm and focus needed to successfully accomplishing the thesis was beyond the usual expectations. I recommend the thesis for a defense. Suggested grade as based on the above mentioned: **Excellent (A)**.

In Brno 24 June 2020

Chudý Peter, doc. Ing., Ph.D. MBA
supervisor