

Review of dissertation thesis by Jiří Hynek

Impact of Subjective Visual Perception on Automatic Evaluation of Dashboard Design

The thesis deals with evaluation of Dashboards – as specific user interfaces by using subjective and partly objective metrics. The text describes the background of user experience optimization and evaluation, the author collected and published a dataset of dashboards and he made a tool for their analysis and carried out several experiments on the dataset. The text is logically structured, written in good English, and generally well understandable.

It is not perfectly clear why dashboards should be treated distinctly from other user interface forms. The author does not make any convincing argument in this direction and this should be cleared during the defense of the thesis.

The author has published several papers directly in the domain of the submitted thesis. In the analysis of the results, the author correctly states numerous limitations of the experiments carried out. The respondents of the user experiments appear to be solely students of courses taught at FIT BUT. The author reflects this limitation, but it is disappointing that he has not made any attempts at collecting a better audience for the experiments. This should be discussed during the defense of the thesis. The results of the experiments were also oftentimes not convincing – the hypotheses that should have been verified by the experiments were in many cases disproved. The proposed (and adapted from the literature) metrics for evaluation of dashboards did not often turn out to be good indications of im/proper design of the dashboards. The author should clearly state during the defense, what metrics and approaches for evaluation of dashboards proved to be useful contributions of the thesis.

The author demonstrated that he is able to carry out scientific research and publish the results. He collected and published a dataset of dashboard samples accompanied with some (though far from exhaustive) ground truth annotations, he made available an online tool for analysis and assessment of dashboards, and published a number of research articles on the subject. Since the research is largely related to subjective studies, the author should not be blamed that the objective approaches proposed in the thesis were not found to be extremely useful in analysis of dashboards.

Although the results do not constitute an ultimate answer to the problem of evaluation and assessment of dashboards or user interfaces in general, the reviewer acknowledges that the author demonstrated that he is capable of performing scientific research and publishing its results and that he has demonstrated sufficient knowledge in the area of evaluation of user interfaces. The collected and published dataset, as well as the online tool for analysis of dashboards are valid contributions to the research community. The reviewer therefore **recommends** the thesis to be **accepted** by the committee and the PhD. degree to be granted.

In Brno, October 8th 2019

prof. Ing. Adam Herout, Ph.D.