

Review of habilitation thesis by

RNDr. Elena Šikudová, PhD.

titled

# Features, Dynamic Range and Attention in Computer Vision

This is a review of the habilitation thesis submitted by RNDr. Elena Šikudová, PhD. in February 2017.

The thesis is written as an introductory and overview discourse on the topics that the applicant has worked on. This text is accompanied by eight research papers authored or co-authored by the applicant, concerning the exact topics described by the title of the thesis.

The applicant has established herself as an experienced researcher and teacher. She has been continually publishing about multiple subjects within the field of computer vision. Her contributions pointed out in the thesis are the following:

- Study of *low-level visual features*, their *extraction* and *applications*. Four articles in the appendix of the thesis are dedicated to different facets of this topic.
- New methods for *HDR imaging* and HDR tone mapping. Two articles are dedicated to this branch of research, and the applicant collaborated on this subject with international partners.
- Research of *perceptually driven rendering*, focusing on non-traditional aspects, such as relation of sound (beat) and animation frame rate.

The text of the habilitation thesis itself is clear, concise, and well-focused. Some aspects of the mathematical notation seem unusual, but overall, the explanations are correct and sound. Formally, the text contains several language mistakes and typos, which could have been avoided by a round of proofreading. Also, the reviewer would appreciate, if the thesis – targeted on color, image, and visual subjects – would have been printed in color, so that many of the images would not lose their legibility.

There is no doubt that the applicant has established herself in the academic community of computer vision and computer graphics. Her publications written jointly within international teams are a confirmation that she is linked within the international scientific community. The reviewer greatly appreciates her long-lasting involvement in organization of the Spring Conference on Computer Graphics, serving the local international computer graphics and computer vision community. Last, but not least, the reviewer greatly appreciates the applicant's effort on a comprehensive book in Slovak language „*Počítačové videnie: Detekcia a rozpoznávanie objektov*“, which does not have comparison in the Slovak

technical literature and it is an unquestionable confirmation that the applicant plays an important role in the local education and research of the highly specialized and challenging field of computer vision.

**I recommend accepting the habilitation thesis** as a sufficient proof of the applicant's capabilities and recognition in the research area.

In Brno, June<sup>2nd</sup> 2017

prof. Ing. Adam Herout, Ph.D.