

Review of Master's Thesis

Student: Kubíček Martin, Bc.
Title: Creating a Depth Map of Eye Iris in Visible Spectrum (id 22566)
Reviewer: Kanich Ondřej, Ing., Ph.D., UITS FIT VUT

- 1. Assignment complexity** **more demanding assignment**
The assignment of this work is fairly difficult. The main goal is to create original methodology for iris scanning. The emphasis is on using visible light and merging of several images. Database should be collected and evaluated.
- 2. Completeness of assignment requirements** **assignment almost fulfilled**
Thesis describes several approaches with different cameras, lenses, lighting methods and post processing. Main results are the manual and automatic stacking methodologies. There are a lot of images in the database but not all of them are used for stacking. What I am still missing is comprehensive evaluation of both methods and their comparison to the state-of-the-art.
- 3. Length of technical report** **in usual extent**
Scope of the work is somewhere between the minimal and usual range. It is closer to the usual range and I can also imagine some parts to be larger.
- 4. Presentation level of technical report** **57 p. (E)**
Logical structure and continuity of each chapter is ok. With exception to chapter 5 which is longer than the others, are scopes of the chapters fine. The biggest issue is the readability and comprehensiveness of the work. That is mainly because of a complicated sentences and strange word ordering. There are small issues like image processing theory is missing, sometimes subchapters do not have clear conclusion, etc.
- 5. Formal aspects of technical report** **55 p. (E)**
Grammatically the main problems are the word ordering and weird sentence structure. Typographically work is also not exactly correct. There are missing dots in the labels, typos, figure references are missing in the text, 3rd level headlines inconsistencies (used in one chapter, not used in other, shown in the content list), sometimes strange spacing and unnecessary capitalization.
- 6. Literature usage** **52 p. (E)**
Sources are up to date and they are related to the topic of the thesis. On the other hand there is not a lot of sources and majority of them are webpages. More references could be listed in the field of image processing. References in bibliography are inconsistent. Different formats of referencing are used. Position and spacing of the references in the text is also wrong. Large amount of terms used in the work are without references and some larger parts of the text in the theoretical chapters is missing references too.
- 7. Implementation results** **51 p. (E)**
Final scripts are relatively simple, without a lot of comments. On the other hand there is some work in manual stacking method. Evaluation is done only for used approach in manual stacking. Otherwise validation and verification of overall performance of the automatic or manual stacking is done only subjectively without qualitative measurement.
- 8. Utilizability of results**
The goals of the work had potential to extend knowledge in the field. New acquirement method could be useful in the praxis. Description of both methods (manual and automatic) and the evaluation shows that it is not useful as it is right now.
- 9. Questions for defence**
 - What is the reason of using three different edge detectors (in manual stacking there is "Edge detector" in automatic stacking there is "Canny" and in the evaluation there is "Laplacian")?
 - Can you show results of both methods and describe their pros and cons against state-of-the-art image acquisition methods?
- 10. Total assessment** **51 p. sufficient (E)**
The main useful result is the large database. The presentation and technical quality of the thesis is poor. The specification of the work is almost fulfilled. On the other hand the assignment is fairly difficult and results could be improved in future work. Overall I evaluate this work as **E (51 points)**.

In Brno 19. August 2019

Kanich Ondřej, Ing., Ph.D.
reviewer