



Supervisor's statement of a final thesis

Student: Bc. Ondřej Novák
Supervisor: Ing. Vojtěch Franc, Ph.D.
Thesis title: Learning Convolutional Neural Networks for Age Estimation
Branch of the study: Knowledge Engineering

Date: 31. 5. 2018

<i>Evaluation criterion:</i>	<i>The evaluation scale: 1 to 4.</i>
1. Fulfilment of the assignment	<u>1 = assignment fulfilled,</u> 2 = assignment fulfilled with minor objections, 3 = assignment fulfilled with major objections, 4 = assignment not fulfilled
<i>Criteria description:</i> Assess whether the submitted FT defines the objectives sufficiently and in line with the assignment; whether the objectives are formulated correctly and fulfilled sufficiently. In the comment, specify the points of the assignment that have not been met, assess the severity, impact, and, if appropriate, also the cause of the deficiencies. If the assignment differs substantially from the standards for the FT or if the student has developed the FT beyond the assignment, describe the way it got reflected on the quality of the assignment's fulfilment and the way it affected your final evaluation.	
<i>Comments:</i> The goals are clearly stated in the thesis assignment. Student developed tools collecting facial images from Wikipedia pages devoted to people. He also developed an algorithm that automatically annotates faces detected in the downloaded images based on information extracted from the associated wiki-pages. He used the created database to train a CNN the accuracy of which was compared against the same networks however trained from existing databases. The main goals of thesis were thus fulfilled. A small deficiency is in the evaluation of the trained CNN achieving relatively high absolute prediction error as compared to state-of-the-art, which is however not problem of the new database but it is rather caused by the used CNN architecture and training algorithm that could be improved.	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 0 to 100 points (grade A to F).</i>
2. Main written part	50 (E)
<i>Criteria description:</i> Evaluate whether the extent of the FT is adequate to its content and scope: are all the parts of the FT contentful and necessary? Next, consider whether the submitted FT is actually correct – are there factual errors or inaccuracies? Evaluate the logical structure of the FT, the thematic flow between chapters and whether the text is comprehensible to the reader. Assess whether the formal notations in the FT are used correctly. Assess the typographic and language aspects of the FT, follow the Dean's Directive No. 26/2017, Art. 3. Evaluate whether the relevant sources are properly used, quoted and cited. Verify that all quotes are properly distinguished from the results achieved in the FT, thus, that the citation ethics has not been violated and that the citations are complete and in accordance with citation practices and standards. Finally, evaluate whether the software and other copyrighted works have been used in accordance with their license terms.	
<i>Comments:</i> Text of the thesis is the main weakness of otherwise good work. It is clearly visible that the text was written in haste. The structure is poor. The sections are too long. There are many typographical and grammatical errors. The reader has often hard time to extract relevant information although it main be contained.	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 0 to 100 points (grade A to F).</i>
3. Non-written part, attachments	95 (A)
<i>Criteria description:</i> Depending on the nature of the FT, comment on the non-written part of the thesis. For example: SW work – the overall quality of the program. Is the technology used (from the development to deployment) suitable and adequate? HW – functional sample. Evaluate the technology and tools used. Research and experimental work – repeatability of the experiment.	
<i>Comments:</i> Other outcomes are: i) the database, ii) Python code used to create the database and iii) a web page presenting the database and also containing online demo of the trained CNN for age/gender prediction. All the outcomes are of good quality.	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 0 to 100 points (grade A to F).</i>
4. Evaluation of results, publication outputs and awards	90 (A)
<i>Criteria description:</i> Depending on the nature of the thesis, estimate whether the thesis results could be deployed in practice; alternatively, evaluate whether the results of the FT extend the already published/known results or whether they bring in completely new findings.	

Comments:

The main result is the new database of facial images annotated by age and gender. It is currently the second largest public database of this type. The database has a good chance to be widely used by the community.

Evaluation criterion:

The evaluation scale: 1 to 5.

5. Activity and self-reliance of the student

5a:
1 = excellent activity,
2 = very good activity,
3 = average activity,
4 = weaker, but still sufficient activity,
5 = insufficient activity
5b:
1 = excellent self-reliance,
2 = very good self-reliance,
3 = average self-reliance,
4 = weaker, but still sufficient self-reliance,
5 = insufficient self-reliance.

Criteria description:

From your experience with the course of the work on the thesis and its outcome, review the student's activity while working on the thesis, his/her punctuality when meeting the deadlines and whether he/she consulted you as he/she went along and also, whether he/she was well prepared for these consultations (5a). Assess the student's ability to develop independent creative work (5b).

Comments:

The student is an excellent program, fast learner and a bright person in general. In the periods when he is focused on the work his progress is above average. Unfortunately, periods of concentrated works were interrupted by long breaks. Otherwise, he was working independently and was very proactive in searching for new sources relevant to the work. He is certainly able of independent creative work.

Evaluation criterion:

The evaluation scale: 0 to 100 points (grade A to F).

6. The overall evaluation

75 (C)

Criteria description:

Summarize which of the aspects of the FT affected your grading process the most. The overall grade does not need to be an arithmetic mean (or other value) calculated from the evaluation in the previous criteria. Generally, a well-fulfilled assignment is assessed by grade A.

Comments:

The created database is a solid work that will be very likely used by others. The main deficiency of the work is sub-optimal quality of the written text which prevents me to evaluate the work by grade A.

Signature of the supervisor: