



Supervisor's statement of a final thesis

Student: Bc. Petr Lorenc
Supervisor: Ing. Jan Šedivý, CSc.
Thesis title: Semantic understanding of natural conversation
Branch of the study: Knowledge Engineering

Date: 28. 1. 2019

<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 submitted FT fulfills the objectives. The results of sequential algorithms considering accuracy, memory and GPU requirements are on page 42. The results combining the entity and intent recognition are an original work delivering better accuracy for intent while preserving the resources. This approach is an excellent result for this type of work.	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 0 to 100 points (grade A to F).</i>
2. Main written part	70 (C)
<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> The scope of the FT is adequate for this type of problems. The FT is written in a short engineering style but includes all details in the theoretical approach chapters as well as in the implementation section. The concluding chapters are summarizing the achieved results. The FT has a logical structure, and the chapters follow in a natural way. The FT uses the standard CTU Latex format and standard notation. The FT is written in English, which is very good for this type of thesis. However, the author still needs to brush up his English skills; there are several not very elegant descriptions and sentences. The used literature is adequately mentioned with a list of 52 references at the end.	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 0 to 100 points (grade A to F).</i>
3. Non-written part, attachments	100 (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> The student was working during the last two semesters very hard. He has shown a deep understanding and ability very quickly master the deep neural network packages and ran a lot of experiments. He has progressed from an essential type of algorithms with mediocre results to tuned and optimized solutions delivering excellent accuracy.	
<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	100 (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 results can be used in practical implementations of chatbots or in other NLP applications. The achieved accuracy, memory and GPU requirements extend the already published results. Some of the algorithms were used in the successful Alquist chatbot. Part of his contribution to the Alquist code has been also published in the Amazon re:Invent proceedings.

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 was very reliable in delivering as well as joining in discussions and regularly coming to consult his progress. He has been working in our group for more than one year. He has become one of the members of the Alquist team. The team got a second place in the Alexa Prize 2018 with the Alquist chatbot.

Evaluation criterion:

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

6. The overall evaluation

95 (A)

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:

I think Petr is a hard working person with a lot of skills in computer science and NLP specifically. I am sure he will be an excellent contributor on any software team. He has shown his high technical as well as research potential in his FT. The results are excellent and therefore I am classifying with the grade A.

Signature of the supervisor: