Review report of a final thesis

Czech Technical University in Prague **Faculty of Information Technology**

Student:	Tomáš Kasalický
Reviewer:	Dr. Ing. Sven Ubik
Thesis title:	SAGElab - gesture driven control using Kinect 2.0
Branch of the study:	Software Engineering

Date: 5. 6. 2016

Evaluation criterion:	*The evaluation scale: 1 to 5.*
1. Difficulty and other comments on the assignment	*1 = extremely challenging assignment,* *2 = rather difficult assignment,* ***3 = assignment of average difficulty,*** *4 = easier, but still sufficient assignment,* *5 = insufficient assignment*

Criteria description:
Characterize this final thesis in detail and its relationships to previous or current projects. Comment what is difficult about this thesis (in case of a more difficult thesis, you may overlook some shortcomings that you would not in case of an easy assignment, and on the contrary, with an easy assignment those shortcomings should be evaluated more strictly.)

Comments:
The thesis required a usual mix of analysis of the state of the art, software programming and testing. A interesting point was the need of gesture control and evaluation with a small set of users.

Evaluation criterion:	*The evaluation scale: 1 to 4.*
2. Fulfilment of the assignment	*1 = assignment fulfilled,* ***2 = assignment fulfilled with minor objections,*** *3 = assignment fulfilled with major objections,* *4 = assignment not fulfilled*

Criteria description:
Assess whether the thesis meets the assignment statement. In Comments indicate parts of the assignment that have not been fulfilled, completely or partially, or extensions of the thesis beyond the original assignment. If the assignment was not completely fulfilled, try to assess the importance, impact, and possibly also the reason of the insufficiencies.

Comments:
The thesis completed the requirements. I have some comments below to the reliability of the main result, thoroughness of its evaluation and formal aspects.

Evaluation criterion:	*The evaluation scale: 1 to 4.*
3. Size of the main written part	***1 = meets the criteria,*** *2 = meets the criteria with minor objections,* *3 = meets the criteria with major objections,* *4 = does not meet the criteria*

Criteria description:
Evaluate the adequacy of the extent of the final thesis, considering its content and the size of the written part, i.e. that all parts of the thesis are rich on information and the text does not contain unnecessary parts.

Comments:
The size of the main written part is all right, I have no comments.

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
4. Factual and logical level of the thesis	*80 (B)*

Criteria description:
Assess whether the thesis is correct as to the facts or if there are factual errors and inaccuracies. Evaluate further the logical structure of the thesis, links among the chapters, and the comprehensibility of the text for a reader.

Comments:
The thesis covers the subject in an appropriate level of detail. My comments are as follows:

Evaluation of recognition reliability of elementar gestures in section 2.4.7 produced rather poor results. It is not clear from the further text how these results were used to improve the recognition algorithm for its final version.

Some interesting decisions are not explained, such as particular threshold values used for some gesture recognition, such as 0.6s in section 2.4.4.3 or rejection of using the official Kinect SDK in section 3.4.2.1.

The group of students used for evaluation should be described in more detail, such as whether all testers were information technology students or also students with other backgrounds, which can result in a very interesting comparison.

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
5. Formal level of the thesis	*80 (B)*

Criteria description:
Assess the correctness of formalisms used in the thesis, the typographical and linguistic aspect s, see Dean's Directive No. 12/2014, Article 3.

Comments:

The thesis is clearly structured and it is easy to get oriented. However, it is written in very poor English, which sometimes requires multiple readings to precisely understand what was the intended meaning.

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
6. Bibliography	*90 (A)*

Criteria description:
Evaluate the student's activity in acquisition and use of studying materials in his thesis. Characterize the choice of the sources. Discuss whether the student used all relevant sources, or whether he tried to solve problems that were already solved. Verify that all elements taken from other sources are properly differentiated from his own results and contributions. Comment if there was a possible violation of the citation ethics and if the bibliographical references are complete and in compliance with citation standards.

Comments:

Bibliography includes mostly online resources and much fewer regular papers, but it is in line with the subject of the thesis, which is oriented towards software development using multiple software frameworks and libraries.

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
7. Evaluation of results, publication outputs and awards	*75 (C)*

Criteria description:
Comment on the achieved level of major results of the thesis and indicate whether the main results of the thesis extend published state-of-the-art results and/or bring completely new findings. Assess the quality and functionality of hardware or software solutions. Alternatively, evaluate whether the software or source code that was not created by the student himself was used in accordance with the license terms and copyright. Comment on possible publication output or awards related to the thesis.

Comments:

The results cannot be published in the current form due to limited evaluation and it is mostly implementation work, rather than contributing to new methods or observations. But it can be a good base for further work, which can result in a published paper.

Evaluation criterion:	*No evaluation scale.*
8. Applicability of the results	

Criteria description:
Indicate the potential of using the results of the thesis in practice.

Comments:

I think that the main result, which is a gesture based control of applications on an LCD wall, can be very much useful. For instance, to enhance public museum exhibitions and similar applications. A necessary condition for that is a significant improvement of gesture recognition intuitivity and reliability.

Evaluation criterion:	*No evaluation scale.*
9. Questions for the defence	

Criteria description:
Formulate any question(s) that the student should answer to the committee during the defence (use a bullet list).

Questions:

How do you propose to move forward in a follow-up work to improve intuitivity and reliability of the gesture control?

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
10. The overall evaluation	*80 (B)*

Criteria description:
Summarize the parts of the thesis that had major impact on your evaluation. The overall evaluation **does not** have to be the arithmetic mean or any other formula with the values from the previous evaluation criteria 1 to 9.

Comments:

The thesis is a solid programming work, described in a well organized text, with a space for improvement in evaluation and enhancements for higher intuitivity and reliability of user experience.

Signature of the reviewer: