Supervisor's statement of a final thesis

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

Student:	Bc. Martin Brázdil
Supervisor:	Ing. Pavel Kordík, Ph.D.
Thesis title:	Machine Learning in Game Playing using Visual Input
Branch of the study:	Knowledge Engineering

Date: 8. 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:
Game playing from visual input only is hard.

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:
Implemented more than was required.

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 report is traditionally weakest part of the thesis. It should have been better structured and some parts are very disconnected from the main story line.

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:
Should be better presented, it is quite hard to follow.

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
5. Formal level of the thesis	*85 (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:
It is easy to read, formal definitions are acceptable.

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
6. Bibliography	*85 (B)*

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:
References can be improved - for example, this is nice article for parameter tuning:
http://jmlr.csail.mit.edu/proceedings/papers/v28/bergstra13.pdf

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
7. Evaluation of results, publication outputs and awards	*98 (A)*

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:
Framework is great. Universal and easy to extend. Also, parameter tuning has been done on the top of the assignment. Results are convincing.

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:
It should be better documented. You should say more about convolution nets - how you implement it and optimize it. Show some visualizations for individual games...
Some results are very interesting and they should be explored further and possibly published. Do you plan to opensource the framework?

Evaluation criterion:	*The evaluation scale: 1 to 5.*
9. Activity and self-reliance of the student	*9a:* ***1 = excellent activity,*** *2 = very good activity,* *3 = average activity,* *4 = weaker, but still sufficient activity,* *5 = insufficient activity* *9b:* *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:
Review student's activity while working on this final thesis, student's punctuality when meeting the deadlines and consulting continuously and also, student's preparedness for these consultations. Furthermore, review student's independency.

Comments:
He is extremely creative and independent, but hard to control.

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

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 quality of text is not as high as the quality of results obtained. The amount of work is massive. It was built from scratch. The solution seems to be scalable, not so hard to extend, very fast and efficient. Obtained results are comparable with state of the art approaches and some parts of the thesis have potential to be published.

Signature of the supervisor: