



Review report of a final thesis

Student: Bc. Šimon Lomič
Reviewer: doc. Mgr. Robert Šámal, Ph.D.
Thesis title: Taking and Breaking Games
Branch of the study: System Programming

Date: 5. 6. 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> According to the assignment: The goals of this thesis are: 1) To survey existing results in the field. 2) Try to attack several open problems in solving Subtraction games, Octal and Hexadecimal games, and others. 3) Perform experimental evaluation of various game solving algorithms. All three parts were done exceedingly well.	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 0 to 100 points (grade A to F).</i>
2. Main written part	95 (A)
<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 survey part is extensive -- but this is very welcome, as combinatorial game theory is not yet widely known. In particular Chapter 2 can serve as a useful complementary material for students of this area of mathematics. Next, in Chapter 3, the author presents more specialized survey of Subtraction games, the field to which the original result belong. Chapter 4 contains new results presented on whopping 50 pages. They can be separated roughly into the following three topics: 1) periodicity of subtraction games, answering several open questions and including a nice theory created to understand which subtraction games have the same outcome, 2) description of partizan subtraction games, and finally 3) algorithmic and complexity results. Each of these topics would be in my view sufficient for a master's thesis. There is nice synergy between the parts though: the developed algorithms were also used for building the theory. Thesis is mostly easy to read, the typography is exceedingly good for a thesis. I did not spot any shaky argument. There were several typos and a place where more detailed argumentation would be desired, see below. This, however, is expected in a text of this scope, and I would say that the overall density of errors is on the low side.	
<i>Evaluation criterion:</i>	<i>The evaluation scale: 0 to 100 points (grade A to F).</i>

3. Non-written part, attachments

100 (A)

Criteria description:

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.

Comments:

The attachments are not present in the repository! However, this is not a problem of the author, the printed thesis contains an SD card; unfortunately I do not have it available when writing the report. Based on the written part, I expect the code to be of high quality.

Evaluation criterion:

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

4. Evaluation of results, publication outputs and awards

100 (A)

Criteria description:

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:

I consider this to be thesis of a high quality.
It contains several publishable (and publishing-worthy) results.
Due to the vast extent of the thesis, I would even suggest to divide the content into several papers.

Evaluation criterion:

No evaluation scale.

5. Questions for the defence

Criteria description:

Formulate questions that the student should answer during the Presentation and defence of the FT in front of the SFE Committee (use a bullet list).

Questions:

See a separate pdf file, due to technical limitations of the web app.

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 suggest to accept the thesis as a diploma thesis and to evaluate it with grade A.

Signature of the reviewer: