



Supervisor's statement of a final thesis

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Thesis title: Gauss-Jordan Solver of Linear Equation Systems on GPU
Branch / specialization: Computer Science
Created on: 8 June 2021

Evaluation criteria

1. Fulfillment of the assignment

- [1] assignment fulfilled
- [2] assignment fulfilled with minor objections
- ▶ [3] **assignment fulfilled with major objections**
- [4] assignment not fulfilled

From my perspective, the main problem of this thesis is the testing of the correctness of the results. Therefore, I am not sure if the main output (GPU solver) is correct or not. On the other hand, topics about massive parallelism or GPU programming are not part of the bachelor's study program.

2. Main written part

50/100 (E)

In the written part, chapters and sections are not used correctly.
Literature references are in the wrong format.
The author uses two types of comments: real comments to code lines and pseudocode, but these two types are not distinguished.
The list of bibliography is in the wrong format. There is only one reference to a scientific article.
Some sections (for example, Sec. 3) are extremely short.
Some of the listings are not important, so they should be located in Appendix.
Graphs in Figures 8+9 and 10+11 can be fused.
HW and SW configuration used for testing is not specified.
Page 19: The size of the stripe should be a parameter, not a fixed value.

3. Non-written part, attachments

40/100 (F)

The testing of the correctness of the results is problematic:
After solving SLE $Ax=y$, values Ax and y should be compared
The student compares values of modified A computed by CPU or by GPU functions, but the

student makes both of these functions.

The student uses an approach based on multiple streams. This approach should be compared with an approach based on multiple thread blocks.

4. Evaluation of results, publication outputs and awards

20 /100 (F)

I do not see any contribution in the work of the author.

5. Activity of the student

- [1] excellent activity
- [2] very good activity
- [3] average activity
- ▶ **[4] weaker, but still sufficient activity**
- [5] insufficient activity

The student has started to work just a few weeks before the submission.

6. Self-reliance of the student

- [1] excellent self-reliance
- [2] very good self-reliance
- ▶ **[3] average self-reliance**
- [4] weaker, but still sufficient self-reliance
- [5] insufficient self-reliance

The overall evaluation

45 /100 (F)

I evaluate the written part as "borderline", but the non-written part as "reject". There are too many significant errors, so I don't recommend the thesis for the defense.

Instructions

Fulfillment of the assignment

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.

Main written part

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.

Non-written part, attachments

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.

Evaluation of results, publication outputs and awards

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.

Activity of the student

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.

Self-reliance of the student

From your experience with the course of the work on the thesis and its outcome, assess the student's ability to develop independent creative work.

The overall evaluation

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.