

Jury Member Report – Doctor of Philosophy thesis.

Name of Candidate: Evgenii Baraboshkin

PhD Program: Petroleum Engineering

Title of Thesis: Automated core description based on computer analysis

Supervisor: Professor Dmitry Koroteev

Co-supervisor: Dr. Denis Orlov

Name of the Reviewer: Dr. Dicky Harishidayat

I confirm the absence of any conflict of interest

Date: December 20, 2022

The purpose of this report is to obtain an independent review from the members of PhD defense Jury before the thesis defense. The members of PhD defense Jury are asked to submit signed copy of the report at least 30 days prior the thesis defense. The Reviewers are asked to bring a copy of the completed report to the thesis defense and to discuss the contents of each report with each other before the thesis defense.

If the reviewers have any queries about the thesis which they wish to raise in advance, please contact the Chair of the Jury.

Reviewer's Report

Reviewers report should contain the following items:

- Brief evaluation of the thesis quality and overall structure of the dissertation.
- The relevance of the topic of dissertation work to its actual content
- The relevance of the methods used in the dissertation
- The scientific significance of the results obtained and their compliance with the international level and current state of the art
- The relevance of the obtained results to applications (if applicable)
- The quality of publications

The summary of issues to be addressed before/during the thesis defense

- Brief evaluation of the thesis quality and overall structure of the dissertation.
The thesis quality is relatively high and overall structure of the dissertation could be improved.
- The relevance of the topic of dissertation work to its actual content.
The dissertation topic is relevant to current research and industrial application that utilized core data.
- The relevance of the methods used in the dissertation.
The methods used in the dissertation are very relevant to the automation of core analysis.
- The scientific significance of the results obtained and their compliance with the international level and current state of the art.
The results provide significant contribution to the scientific knowledge with international standard and current state of the art.
- The relevance of the obtained results to applications (if applicable).
The results are relevant to both academic research and industrial application.
- The quality of publications.
Two publications are published in international peer-reviewed with high impact journal, therefore the quality is above the average.

The summary of issues to be addressed before the thesis defense:

- *The organization of PhD thesis structure is need to be improved, for example see sub-chapter 2.2, 4.1, and throughout the PhD thesis.*
- *PhD thesis objective that trying to solve the problem is missing in the Chapter 1.*
- *Some sentences are described like bullet points with no sentence's connection in paragraph, for instance: Paragraph 2 on the chapter 2, the last three paragraphs on the sub-chapter 2.1, the last three paragraphs on the sub-chapter 2.3, the first paragraph on the chapter 3, and throughout the PhD thesis.*
- *I am not native English speaker, but I feel some sentences are describe as verbal structure, for instance see sub-chapter 1.2.5 including the same sub chapter without numbers (See pages 40 and 42). Therefore, I strongly suggested to have English proofread for this PhD thesis.*
- *Figure quality could be improved since some text from screenshot is not readable.*
- *Please check for some typos throughout the PhD thesis.*
- *The discussion sub chapter (4.1, 5.1 and 6.1) need to be improved significantly. I strongly suggest to create discussion as main chapter, so it will discuss and elaborate all the result on this PhD thesis in an integrated way. Furthermore, the discussion chapter of the PhD thesis or manuscript should describe how the results have filled the gap that identified in the introduction chapter. The discussion chapter should also provide caveats to the interpretation, how the literature alleviates concerns, and describes how the PhD thesis or manuscript advances the research field by providing new opportunities. These are missing from the current version of this PhD thesis.*

Provisional Recommendation

I recommend that the candidate should defend the thesis by means of a formal thesis defense

I recommend that the candidate should defend the thesis by means of a formal thesis defense only after appropriate changes would be introduced in candidate's thesis according to the recommendations of the present report

The thesis is not acceptable and I recommend that the candidate be exempt from the formal thesis defense