Evaluation of the bachelor thesis – reviewer

Author of evaluation:	doc. Ing. Jakub Jirásek, Ph.D.
Thesis tutor:	Jagar A. Ali, Ph.D.
Thesis topic:	A critical review on the application of artificial intelligence (machine learning) in the oil and gas industry
Student:	Shad Kamal Qadir

1. *Basic evaluation of the thesis*

   Review thesis is focused on the significant topic, with growing application in the oil and gas industry. However, the critical part is largely missing either due to student's lack of deep experience in this topic, or due to limited page range.

2. *Does the thesis fully correspond to the assignment?*

   The assignment is not attached, so I can not evaluate it.

3. *Evaluation of the thesis structure, continuity of its individual parts, and their completeness?*

   Thesis has logical structure and cover all major fields of AI applications in the petroleum and gas industry. However, I would not consider UAV in petroleum exploration (chapter 3.2.2) being part of the AI in most cases, and also UAV does not belong to AI algorithms (Table 4, page 52).

   For the reader, it is troublesome to understand who is the author of the case study (chapter 4). Is it Nande (2018) cited only in Figures 15 and 16, or author of the thesis?

4. *Evaluation of the formal side of the thesis (page range, graphics, citations, intelligibility, data and discussion, language)*

   Formal side of the thesis is in accord with given regulations. The exceptions are just minor, such as:

   - list of abbreviations is not arranged alphabetically, so it is not helping the readers

   - page 11 – subchapter 1.1 is composed of one single paragraph

   - How could Donald O. Hebb in his book from 1949 introduced his work from year 1954 (page 16)?

- several subchapters contain no reference (e.g., 3.1.2, 3.2.5, 3.2.6, 3.3.1.1, 3.3.1.3) – who is their author?

- many references in the References list are not arranged in the alphabetical order, so it is confusing to look up for them

- some references are not in accord with the given style (e.g., Sircar et al. 2021 is missing volume, number, and page range of the article)

5. *Other insights, critical comments*

   The thesis in my opinion lacks the critical view of the student, which was promised in its title.

6. *Evaluate whether, and in which parts does the thesis bring new knowledge?*

   Even at the situation when the thesis assignment is not supplied in the work itself, it is clear that the thesis is review. Due to that, no new knowledge is present.

7. *Characteristics of the selection and use of information sources (references)*

   Author used ca. 90, mostly very recent information sources. It is appropriate for the review thesis.

8. *Overall evaluation of the bachelor thesis*

   I recommend the work for defence.

Overall evaluation: C

Ostrava, August 13, 2023 doc. Ing. Jakub Jirásek, Ph.D.