

Jury Member Report – Doctor of Philosophy thesis.

Name of Candidate: Daryna Dementieva

PhD Program: Computational and Data Science and Engineering

Title of Thesis: Methods for Fighting with Harmful Multilingual Textual Content

Supervisor: Prof. Alexander Panchenko

Name of the Reviewer: Maxim Panov, Senior Researcher, Technology Innovation Institute, Abu Dhabi, UAE

I confirm the absence of any conflict of interest.	Signature: Date: 22-09-2022
--	--

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

The considered thesis targets the usage of Natural Language Processing methods to improve the everyday life of human beings. The author considers two important problems:

1. Detection of fake news.
2. Text detoxification.

Both topics are relevant for modern data analysis and require non-trivial algorithmic work. The author shows fluency in state-of-the-art text classification methods. Moreover, some of the methods required non-trivial modifications in the course of the work and led to the algorithms, which are interesting for machine learning in general. The author not only develops some methods but also cares about the metrics being used (and develops some new). Importantly, the methods are deployed via chatbots and demonstration systems that makes them much closer to wide practical usage.

The manuscript essentially combines the results of many separate studies though united by applications and methods. I really appreciate the effort made to present these diverse results in clear and comprehensive way. The manuscript could be an example of well-structured academic text. I should also mention some hilarious examples in detoxification part that add some fun to reading (and are well detoxified by the developed methods).

In my opinion, thesis results are very relevant from the application perspective. This is an application driven thesis and is an example of the one executed in a very nice way. Importantly, the author provides all the details on the algorithm construction and training procedures, which allows to directly apply them.

Finally, the results of the thesis research were published in proceedings of well-reputed conferences including one publication in highly prestigious ACL conference (CORE A*), two publications in student research workshop at ACL that is also notable, 2 more CORE A conference publications and one publication in Q2 journal. Thus, the quality of the publications well supports the overall good scientific quality of Daryna's thesis research. However, there are some issues with publication data as listed in the manuscript:

- Publications #2 and #9 are at a student research workshop at ACL (not the main track). I don't think it can be considered as CORE A* as CORE ranking applies to main tracks of the conferences.
- Publication #3 should be marked as CORE A as DSAA became CORE A Conference a year ago.
- Publications #5 and #8 do not have any bibliographic data.

While I have overall positive opinion about the research contents of the thesis, I think that these small issues should be corrected.

To sum up, I think that the issues found do not decrease the scientific quality of the thesis and Daryna Dementieva deserves to be awarded with Skoltech PhD degree.

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