



Supervisor's statement of a final thesis

Supervisor: MSc. Jan Bím, Ph.D.
Student: Bc. Marek Nevole
Thesis title: AutoML for anomaly detection in a semi or unsupervised setting on time series
Branch / specialization: Knowledge Engineering
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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

The student fulfilled the assignment that in my eyes was rather complex for a master thesis.

2. Main written part 95 /100 (A)

The thesis is written in decent quality English, it is well structured and its scope is appropriate for the amount of information it contains. In general, the text is well understandable and written with reasonable logical flow. However, one could object that it contains a few typos and the part about future work could have been slightly more extensive. Nevertheless, I would consider these only minor flaws that do not hamper the overall quality of the thesis. All references are used properly and citations follow the best practices and standards as required.

3. Non-written part, attachments 95 /100 (A)

The non-written part of the thesis consist of a package of source code written in Python. The overall quality is in accordance with the experimental aim of the thesis. Moreover, it is open sourced and published on GitHub allowing for easier potential replication. It demonstrates that the student managed to replicate state of the art approaches from literature and to overcome issue such as discrepancy between published articles and their claimed source codes etc. Finally, I have to note that it could have been slightly better documented facilitating easier future use of the code.

4. Evaluation of results, publication outputs and awards

100 /100 (A)

The student successfully answered all stated research questions. The results are mostly negative and thus not directly applicable in the traditional sense but they bring tremendous value in the clear demonstration of need for a different approach to the problem. All previous potential solutions were proven not to work in the general case which could have been speculated based on their original success. This makes all the findings in this thesis novel and setting a good starting point for further research in this direction.

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 used to have a very well prepared update usually on weekly basis, constantly delivering significant progress in his work.

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 student clearly demonstrated his ability to decompose high level tasks to actionable units and deliver on them.

The overall evaluation

98 /100 (A)

The grade mostly reflects on the fact that the student put together a great piece of fundamental research that if little extended could be potentially published. As mentioned above, the thesis, in my eyes, belongs to those that are rather more extensive and it was carried out with great quality across all criteria.

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. 52/2021, 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.