

## I. IDENTIFICATION DATA

<b>Thesis title:</b>	<b>Efficient Algorithms for Relational Marginal Polytope Construction</b>
<b>Author's name:</b>	<b>Kozák Jan</b>
<b>Type of thesis :</b>	master
<b>Faculty/Institute:</b>	Faculty of Electrical Engineering (FEE)
<b>Department:</b>	Department of Computer Science
<b>Thesis reviewer:</b>	Yuyi Wang
<b>Reviewer's department:</b>	D-ITET, ETH Zurich

## II. EVALUATION OF INDIVIDUAL CRITERIA

<b>Assignment</b>	<b>ordinarily challenging</b>
<i>How demanding was the assigned project?</i>	
This project is challenging since the student needs to get familiar with several concepts (which might not be taught in lectures) such as MLNs, probabilistic inference problems and relational marginal polytopes, etc. Besides, creativity is needed to tackle this problem. However, the planned goals are very reasonable, and the existing methods in papers should be helpful.	

<b>Fulfilment of assignment</b>	<b>fulfilled with major objections</b>
<i>How well does the thesis fulfil the assigned task? Have the primary goals been achieved? Which assigned tasks have been incompletely covered, and which parts of the thesis are overextended? Justify your answer.</i>	
The students successfully understood several complicated concepts and presented them in the first chapters of the thesis. However, it's hard to find anything really interesting in the thesis, and the student did not propose any efficient heuristics or approximation algorithm.	

<b>Methodology</b>	<b>partially applicable</b>
<i>Comment on the correctness of the approach and/or the solution methods.</i>	
The student tried to use ILP to solve this problem. But, I do not fully understand the program there since the notations are not explained. And I do not know why we should use ILP (even if it is a valid solution). For many cases, we have efficient algorithms (domain liftable algorithms), but if we directly reduce to ILP, then we need a solver for NP-hard problems.	

<b>Technical level</b>	<b>F - failed.</b>
<i>Is the thesis technically sound? How well did the student employ expertise in the field of his/her field of study? Does the student explain clearly what he/she has done?</i>	
The student mainly just listed related concepts and the problem. The solution of the problem is just a ILP in the thesis.	

<b>Formal and language level, scope of thesis</b>	<b>D - satisfactory.</b>
<i>Are formalisms and notations used properly? Is the thesis organized in a logical way? Is the thesis sufficiently extensive? Is the thesis well-presented? Is the language clear and understandable? Is the English satisfactory?</i>	
Notations and formalisms are not very clear. The content of Bayesian networks seems not needed. The language is understandable, but can be improved. There are several typos, e.g., page 4 specififying -> specifying.	

<b>Selection of sources, citation correctness</b>	<b>C - good.</b>
<i>Does the thesis make adequate reference to earlier work on the topic? Was the selection of sources adequate? Is the student's original work clearly distinguished from earlier work in the field? Do the bibliographic citations meet the standards?</i>	
Even this paper is not cited: Kuželka, O., Wang, Y., Davis, J., & Schockaert, S. Relational marginal problems: Theory and estimation. In Thirty-Second AAAI Conference on Artificial Intelligence, 2018.	

### Additional commentary and evaluation (optional)

*Comment on the overall quality of the thesis, its novelty and its impact on the field, its strengths and weaknesses, the utility of the solution that is presented, the theoretical/formal level, the student's skillfulness, etc.*

Please insert your comments here.

### III. OVERALL EVALUATION, QUESTIONS FOR THE PRESENTATION AND DEFENSE OF THE THESIS, SUGGESTED GRADE

*Summarize your opinion on the thesis and explain your final grading. Pose questions that should be answered during the presentation and defense of the student's work.*

The grade that I award for the thesis is **E - sufficient**.

This thesis does not provide much insight to this problem.

Date: **6.9.2020**

Signature: Yuyi Wang