THESIS SUPERVISOR'S REPORT

I. IDENTIFICATION DATA

Thesis title:	**Nash Equilibria for Regression Models Over Strategic Data**
Author's name:	**Viacheslav Larionov**
Type of thesis :	bachelor
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	Department of Cybernetics
Thesis reviewer:	Doc. Ing. Tomáš Kroupa, Ph.D.
Reviewer's department:	Department of Computer Science

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	**challenging**

How demanding was the assigned project?

The reason for my choice of "challenging" is mostly the topic of the thesis. Incomplete-information games are among the subjects of advanced *Computational Game Theory* course on the master level. The student deliberately selected the topic expanding his current state of knowledge, which made the assignment challenging for him. The implementation part was on the moderate level of difficulty.

Fulfilment of assignment	**fulfilled**

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.

The main items on the assignment list are all fulfilled. The optional part is fulfilled too, although the supervisor of this thesis specified c) incorrectly. The intended optional task was to "Generalize the existing model to the Bayesian games setting". We were able to amend item c) and clarify the intended optional task in the consultation, so that the thesis extends the original complete-information game to the incomplete-information setting.

Activity and independence when creating final thesis	**B - very good.**

Assess whether the student had a positive approach, whether the time limits were met, whether the conception was regularly consulted and whether the student was well prepared for the consultations. Assess the student's ability to work independently.

We met with the student weekly and he always showed positive attitude. He studied the relevant parts of game theory independently and was able to formulate the main problems and their solution with only minor assistence from the supervisor.

Technical level	**B - very good.**

Is the thesis technically sound? How well did the student employ expertise in his/her field of study? Does the student explain clearly what he/she has done?

The student demonstrated clearly that he can use expertise gained from the study of paper [1] and combine it with his knowledge of general game-theoretic concepts (Bayesian and potential games). He was able to implement the main algorithms in Julia language. My choice of "B" is influenced by somewhat sketchy content of Chapter 4, which makes it difficult for the reader to appreciate the results and interpretation of computational experiments in the thesis.

Formal level and language level, scope of thesis	**B - very good.**

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?

The student uses proper mathematical language to describe the used concepts and main results. The structure of the thesis is fine and the presentation is clear. Some parts are written vaguely, such as the description of Double Oracle algorithm on page 9. It is also not clear from the presentation what is the connection of introduced solution concepts for bayesian games (chapter 2.1.3) to the experiments with the instance of bayesian game discussed in chapter 3.1.2.

Selection of sources, citation correctness	A - excellent.
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?	
The student demonstrated that he understands main results of the contemporary research papers/books and that he is able to refer to them correctly. The introductory part and the review of existing results is clearly distinguished from the student's original work.	

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.

The bachelor thesis deals with and application of game theory to a simple model of data privacy. The student extended the computational results of the original paper to the Bayesian setting. My assessment of the thesis is very positive and I have only a few minor objections listed above.

The grade that I award for the thesis is **B - very good.**

Questions:
1. What would be the performance of employed numerical algorithms for more players?
2. How does such performance depends on the number of types in the Bayesian game?

Date: **11.6.2023**   Signature: