

I. IDENTIFICATION DATA

Thesis name:	Comparative analysis of binary classification algorithms
Author's name:	Zulfiia Galimzianova
Type of thesis :	master
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	Department of Computer Science
Thesis reviewer:	Associate professor Pinyagina Olga Vladislavovna, Ph.D.
Reviewer's department:	Kazan Federal University, Institute of Computational Mathematics and Information Technologies, Department of Data Mining and Operation Research

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	challenging
<i>Evaluation of thesis difficulty of assignment.</i>	
The thesis is devoted to the solution of the problem of classification; the development of new methods, more effective and accurate in comparison with the classical ones, is an actual and rather complex topic.	

Satisfaction of assignment	fulfilled
<i>Assess that handed thesis meets assignment. Present points of assignment that fell short or were extended. Try to assess importance, impact or cause of each shortcoming.</i>	
The author proposed a new modification of the SVM algorithm that provides improvements over the baseline. The experiments on public data demonstrated statistically significant improvements in classification performance in terms of accuracy, precision, and f1-score. The obtained results completely correspond to the assignment.	

Method of conception	correct
<i>Assess that student has chosen correct approach or solution methods.</i>	
The student has chosen correct approach, the proposed modification of the method was properly formulated, the computational results were thoroughly analysed.	

Technical level	B - very good.
<i>Assess level of thesis specialty, use of knowledge gained by study and by expert literature, use of sources and data gained by experience.</i>	
The author has demonstrated the ability to learn and practice modern mathematical methods.	

Formal and language level, scope of thesis	B - very good.
<i>Assess correctness of usage of formal notation. Assess typographical and language arrangement of thesis.</i>	
The thesis is well structured, the reasoning is clear. However, there are some misprints and misspelling in the text and formulas.	

Selection of sources, citation correctness	B - very good.
<i>Present your opinion to student's activity when obtaining and using study materials for thesis creation. Characterize selection of sources. Assess that student used all relevant sources. Verify that all used elements are correctly distinguished from own results and thoughts. Assess that citation ethics has not been breached and that all bibliographic citations are complete and in accordance with citation convention and standards.</i>	
The studied sources are relevant; the citations are used and formed correctly.	

Additional commentary and evaluation
<i>Present your opinion to achieved primary goals of thesis, e.g. level of theoretical results, level and functionality of technical or software conception, publication performance, experimental dexterity etc.</i>
The obtained results completely correspond to the primary goal. The author has demonstrated her scientific research skills.

III. OVERALL EVALUATION, QUESTIONS FOR DEFENSE, CLASSIFICATION SUGGESTION

Summarize thesis aspects that swayed your final evaluation. Please present apt questions which student should answer during defense.

The desired goals are obtained, an effective modification of the SVM method has been developed, which is confirmed by numerical experiments. Additional questions are following:

1. Were the methods compared by computational time?
2. Are iterations of the two compared methods equal in complexity?

I evaluate handed thesis with classification grade **B - very good**.

Date: **29.5.2019**

Signature: