

## ABSTRACT

The thesis is presented in 50 pages. It contains 2 appendixes and bibliography of 14 references. 16 figures and 1 tables are given in the thesis.

The goal of the thesis is to increase efficiency of program code analysis by developing a corresponding automated system.

In the thesis, existing solutions are analyzed, namely, artificial neural networks, adaptive neuro-fuzzy inference systems, decision trees, and logistic regression. They are compared in terms of the accuracy of obtained results, algorithm efficiency and method adaptation to fuzzy data. In the thesis, adaptive neuro-fuzzy inference approach is used to solve the task.

The system is build that is used to form fuzzy production rules. The automated system implementing the chosen method is developed. The developed system is experimentally tested.

Keywords: program code, static metric, adaptive neuro-fuzzy inference system, production rules.