

ABSTRACT

The thesis is presented in 79 pages. It contains 2 appendixes and bibliography of 48 references. Twenty three figures and seven tables are given in the thesis.

Topic relevance. Understanding the attitude of the author to a particular object or phenomenon is important in various areas. For marketing it is important to respond quickly to negative feedback from users and analyze them, for sociology and political science important society's reaction to certain events. The task of sentiment analysis is not new, many works by foreign authors are devoted to methods for solving it. However, the problems of the absence of large buildings, labeled data, dictionaries and an error correction system remain unresolved for the Ukrainian language. In recent years, the use of neural networks for sentimental analysis has become widespread, it allows obtaining high accuracy for large corps of labeled data.

Thesis connection to scientific programs, plans, and topics. The thesis was prepared according to the scientific research plan of the Applied Mathematics Department of the National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute.”

Research goal and objectives. The goal of this thesis is to develop model for sentiment analysis of Ukrainian texts.

To accomplish this goal, the following objectives were reached:

- analysis of existing methods for sentiment analysis;
- implementation of the method for constructing the classification baseline;
- development of mathematical model and Implementation of selected methods;
- validation and improvement architecture of the neural network, analysis of the obtained accuracy;
- development of an API for analyzing sentiment analysis of texts online;

– testing of the developed software, analysis of the obtained accuracy.

Object of research is for sentiment analysis of Ukrainian texts.

Subject of research is existing methods for sentiment analysis; methods and models representation of texts; existing metrics for assessing the quality of tasks of classification; neural network architecture.

Methods of research. To solve the task, the following methods were used: methods for representing texts (for processing input data), neural networks and transfer learning (for sentiment analysis), methods of algorithm theory and programming (for software implementation of developed algorithms);

Scientific contribution consists of the following:

– tested and applied transfer learning for sentiment analysis Ukrainian texts using Russian texts.

Practical value of obtained results. The results of the work can be used by companies to automatically sentiment analysis of user feedback.

Approbation of the thesis results. Basic ideas and results of the research were presented at the 10th Conference of Young Scientists "Applied Mathematics and Computing" 2018

Publications. Thesis results are published in 1 scientific works: – in theses of reports of scientific conferences.

Keywords: sentiment analysis, neuron network, transfer learning