

ABSTRACT

The thesis is presented in 83 pages. It contains 2 appendixes and bibliography of 28 references. 19 figures and 4 tables are given in the thesis.

The main task of the thesis is to create the optimal mathematical model for emotion recognition by human's voice. In accordance with aforementioned tasks, it is necessary to analyze features of the voice signal and how to work with it, to explore the main methods of emotion recognition and working principle of neural networks in order to develop the algorithms for emotion recognition by human's voice using neural networks. For demonstration of efficiency of the developed model, it is necessary to create the appropriate software.

In the thesis two methods of emotion recognition by human's voice were considered: artificial neural network method and support vector machine. These two methods were compared from the point of view of classification rate, training rate, noise resistance. In the thesis artificial neural network method is used to solve the task.

During the working process, the mathematical model was built and the software, which demonstrates the efficiency of this model, was created.

There were written and published the abstracts for two conferences based on the thesis: VI International conference "Data protection and security of information systems" and Tenth international theoretical and practical conference "The integrated intelligent robotechnical complexes" (IIRTC-2017).

Keywords: emotion, informative system of features, artificial neural network, mel-frequency cepstral coefficients, artificial neuron, perceptron, weights.