ABSTRACT

Bachelors thesiscontains 85 pp., 22 fig., 7 table, 2 appendixes, 29 sources.

Theme – Machine learning module for heart disease detection.

Object of study - discrete signal conversion algorithms for feature extraction, model of convolutional neural networks.

Subject of investigation - wavelet transform algorithms for pre-processing of digital signals, convolutional neural networks for classification tasks.

Purpose - to create models of discrete signal conversion and retrofit models convolutional neural network to achieve high classification accuracy of the data.In this paper the mathematical model of the wavelet transforms of the sampled signal collected by ECG model convolutional neural networks by the possibility of using neural networks within the received data set, the analysis of discrete wavelet transform based on wavelet "Morlet" and "Mexican hat", implement web application for heart disease detection based on ECG recordings. The paper also presents research results in graphical form.

CONVOLUTIONAL NEURAL NETWORK, WAVELET TRANSFORM, ECG, WEB APPLICATION, MACHINE LEARNING