ABSTRACT

Bachelor thesis, volume 2: 55 p., 2 tabl., 14 fig., 2 append., 11 sources.

NEURAL NETWORKS, CONVOLUTIONAL NEURAL NETWORKS, VIDEO EMOTION CLASSIFICATION, 3D CONVOLUTIONS, VIDEO PROCESSING, MULTICLASSIFICATION

This work consists of 3 volumes: 1 volume - definition of the relevance of the work, economic analysis, theoretical and practical association of audio and video models using ensembling methods, 2 volume - theoretical and practical modeling of video classification of emotions, 3 volume - theoretical and practical modeling audio classification of emotions.

The purpose of this volume of the bachelor thesis is to familiarize with the concept, application and directions of the deep neural networks for human video emotion classification in real time; familiarization with the main principles of constructing convolutional deep neural network architectures for practical goals, in particular, creating optimal architectures for emotion classification; determining the relevance of the application, the advantages and disadvantages of the selected methods, developing guidelines for the use and improvement of the built architecture.

Was constructed the architecture of the convolutional neural network with different improvements, were thoroughly studied the principles of the functioning and applications of some libraries of deep learning, via theoretical and experimental way were revealed the specifics of metaparameters for model optimization; were created examples with train data, which demonstrated the efficiency of the constructed model.