ABSTRACT

The work is written on 50 papers, contains references to the list of used literature with 19 items and provides 13 figures, 1 table and 2 appendices with source code and illustrations.

The main goal of this work is software development of visual feature learning based on convolutional neural network and object classification based on multilayer perceptron which uses learned features.

In this work existing methods of feature learning and image classification were described and analyzed. There was described an architecture of convolutional neural network in this work.

The task was completed using convolutional neural network. In this work described approach of using pre-trained neural network for image classification with objects which belong to new classes of objects and weren`t used for training of convolutional neural network.

Keywords: object recognition, object classification, convolutional neural network, machine learning, deep learning.