

CLAIM

1. A method of teaching of deep neural networks for processing images for object recognition, wherein the teaching is based on distributions of pairwise similarity measures, the method including the following stages:
 - a marked learning sample is obtained, where each element of the learning sample has a mark of the class to which it belongs, wherein the element is an object in an image and the class is defined as a semantic class of the object;
 - a set of non-crossing random subsets of input data learning sample is formed for a deep neural network in such a way that they represent a learning sample when combined;
 - each formed subset of the learning sample is given to the input of the deep neural network which results in a deep representation of this subset of the learning sample;
 - all pairwise measures of similarity between deep representations of elements of each subset obtained at the previous stage are determined;
 - measures of similarity between elements that have the same class marks, determined at the previous stage, are referred to the measures of similarity of positive pairs, wherein each positive pair refers to two images containing objects of the same semantic class, and the measures of similarity between elements that have different class marks, are referred to the measures of similarity of negative pairs, wherein each negative pair refers to two images containing objects of different semantic class;
 - the probability distribution of similarity measures for positive pairs and the probability distribution of similarity measures for negative pairs are determined using a histogram;
 - the loss function is formed on the basis of probability distributions of similarity measures for positive and negative pairs determined at the previous stage;
 - the loss function formed at the previous stage is minimized using the BPE technique.
2. The method specified in cl. 1 is characterized by the fact that a marked learning sample is obtained from the data warehouse.
3. The method specified in cl. 1 is characterized by the fact that a class mark is numeric or symbolic.