where one or more training images of the training images are each associated with two or more labels of the labels and where one or more labels of the labels each correspond to an image classification class. The method further includes classifying training images into one or more classes using a deep convolutional neural network, and comparing the classification of the training images against labels associated with the training images. The method also includes updating parameters of the deep convolutional neural network based on the comparison of the classification of the training images against the labels associated with the training images.

[0010] In another example embodiment, a method of classifying images using one or more image classification models includes obtaining training images associated with labels, wherein one or more training images of the training images are each associated with two or more labels of the labels and wherein one or more labels of the labels each correspond to an image classification class. The method further includes training a deep convolutional neural network using the training images and the labels associated with the training images. The method also includes classifying an input image into one or more classes based on the trained deep convolutional neural network.

[0011] In yet another example embodiment, a system for classifying images using one or more image classification models includes a training image source comprising training images associated with labels, wherein the labels include codes used by a trademark registration organization or an industrial design registration organization. The system further includes an image processing device communicably coupled to the training image source, wherein the image processing device is configured to obtain the training images from the training image source and to train a deep convolutional neural network using the training images and the labels associated with the training images. The system also includes an input image source comprising input images to be classified into image classification classes, wherein classifying an input image into one or more image classification classes associates the input image with one or more labels corresponding to the one or more image classification classes.

[0012] These and other aspects, objects, features, and embodiments will be apparent from the following description and the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] Reference will now be made to the accompanying drawings, which are not necessarily drawn to scale, and wherein: