CLAIMS

1. A method of predicting correlation between objects involved in an image, comprising:

detecting a first object and a second object involved in an acquired image, wherein the first object and the second object represent different body parts;

determining first weight information of the first object with respect to a target region and second weight information of the second object with respect to the target region, wherein the target region corresponds to a surrounding box for a combination of the first object and the second object;

performing weighted-processing on pixel values of various pixels in a feature map of the target region respectively based on the first weight information and the second weight information to obtain a first weighted feature and a second weighted feature of the target region; and

predicting a correlation between the first object and the second object within the target region based on the first weighted feature and the second weighted feature, wherein the correlation between the first object and the second object means that the first object and the second object belong to a same body.

2. The method according to claim 1, wherein the method further comprises:

determining, based on a first bounding box for the first object and a second bounding box for the second object, a box that covers the first bounding box and the second bounding box but has no intersection with the first bounding box and the second bounding box as the surrounding box; or,

determining, based on the first bounding box for the first object and the second

bounding box for the second object, a box that covers the first bounding box and the second bounding box and is externally connected with the first bounding box and/or the second bounding box as the surrounding box.

3. The method according to claim 1 or 2, wherein determining the first weight information of the first object with respect to the target region and the second weight information of the second object with respect to the target region comprises:

performing regional feature extracting on a region corresponding to the first object to determine a first feature map of the first object;

performing regional feature extracting on a region corresponding to the second object to determine a second feature map of the second object;

obtaining the first weight information by adjusting the first feature map to a preset size, and

obtaining the second weight information by adjusting the second feature map to the preset size.

4. The method according to any one of claims 1 to 3, wherein performing the weighted-processing on the target region respectively based on the first weight information and the second weight information to obtain the first weighted feature and the second weighted feature of the target region comprises:

performing regional feature extracting on the target region to determine the feature map of the target region;

performing a convolution operation, with a first convolution kernel that is constructed based on the first weight information, on the feature map of the target

region to obtain the first weighted feature; and

performing a convolution operation, with a second convolution kernel that is constructed based on the second weight information, on the feature map of the target region to obtain the second weighted feature.

5. The method according to any one of claims 1-4, wherein predicting the correlation between the first object and the second object within the target region based on the first weighted feature and the second weighted feature comprises:

predicting the correlation between the first object and the second object within the target region based on the first weighted feature, the second weighted feature, and any one or more of the first object, the second object, and the target region.

6. The method according to claim 5, wherein predicting the correlation between the first object and the second object within the target region based on the first weighted feature, the second weighted feature, and any one or more of the first object, the second object, and the target region comprises:

obtaining a spliced feature by performing feature splicing on the first weighted feature, the second weighted feature, and respective regional features of any one or more of the first object, the second object, and the target region; and

predicting the correlation between the first object and the second object within the target region based on the spliced feature.

7. The method according to any one of claims 1-6, further comprising:

determining, based on a prediction result for the correlation between the first

object and the second object within the target region, correlated objects involved in the image.

8. The method according to claim 7, wherein

the method further comprises:

combining respective first objects and respective second objects detected from the image to generate a plurality of combinations, wherein each of the combinations comprises one first object and one second object; and

determining, based on the prediction result for the correlation between the first object and the second object within the target region, correlated objects involved in the image comprises:

determining a correlation prediction result for each of the plurality of combinations, wherein the correlation prediction result comprise a correlation prediction score;

selecting a current combination from respective combinations in a descending order of the correlation prediction scores of the respective combinations; and

for the current combination:

counting, based on the determined correlated objects, second determined objects that are correlated with the first object in the current combination and first determined objects that are correlated with the second object in the current combination;

determining a first number of the second determined objects and a second number of the first determined objects; and

in response to that the first number does not reach a first preset threshold and the second number does not reach a second preset threshold, determining the first object and the second object in the current combination as correlated objects involved in the image.

9. The method according to claim 8, wherein selecting the current combination from the respective combinations in the descending order of the correlation prediction scores of the respective combinations comprises:

selecting, from the combinations whose correlation prediction scores reach a preset score threshold, the current combination in the descending order of the correlation prediction scores.

10. The method according to any one of claims 7-9, further comprising:

outputting a detection result of the correlated objects involved in the image.

11. The method according to any one of claims 1-10, wherein

the first object comprises a face object; and

the second object comprises a hand object.

12. The method according to claim 1, further comprising:

training, based on a first training sample set, a target detection model; wherein the first training sample set contains training samples with first annotation information; and wherein the first annotation information comprises a bounding box for the first object and a bounding box for the second object; and

training, based on a second training sample set, the target detection model and a correlation prediction model jointly; wherein the second training sample set contains training samples with second annotation information; and wherein the second annotation information comprises the bounding box for the first object, the bounding box for the second object, and annotation information of the correlation between the first object and the second object;

wherein the target detection model is configured to detect the first object and the second object involved in the image, and the correlation prediction model is configured to predict the correlation between the first object and the second object involved in the image.

13. An apparatus for predicting correlation between objects involved in an image, comprising:

a detecting module, configured to detect a first object and a second object involved in an acquired image, wherein the first object and the second object represent different body parts;

a determining module, configured to determine first weight information of the first object with respect to a target region and second weight information of the second object with respect to the target region, wherein the target region corresponds to a surrounding box for a combination of the first object and the second object;

a weighted-processing module, configured to perform weighted-processing on pixel values of various pixels in a feature map of the target region respectively based on the first weight information and the second weight information to obtain a first weighted feature and a second weighted feature of the target region; and

a correlation-predicting module, configured to predict a correlation between the first object and the second object within the target region based on the first weighted feature and the second weighted feature, wherein the correlation between the first object and the second object means that the first object and the second object belong to a same body.

14. An electronic device, comprising:

a processor; and

a memory for storing executable instructions by the processor;

wherein the processor is configured to call the executable instructions stored in the memory to implement the method of predicting correlation between objects involved in an image according to any one of claims 1-12.

15. A computer-readable storage medium having a computer program stored thereon, wherein the computer program is configured to execute the method of predicting correlation between objects involved in an image according to any one of claims 1-12.