

CLAIMS

1. A method of determining object classification, comprising:

performing, by a target detection network, an object detection on a first image to obtain a first classification confidence of a target object involved in the first image, wherein the first classification confidence indicates a confidence that the target object belongs to a first classification;

obtaining an object image involving a re-detection object from the first image and performing by one or more filters, an object detection on the object image, to determine a second classification confidence of the re-detection object, wherein the re-detection object is a target object of which the first classification confidence is within a preset threshold range, and the second classification confidence indicates a confidence that the re-detection object belongs to a second classification;

correcting the first classification confidence of the re-detection object based on the second classification confidence, to obtain an updated confidence;

determining a classification detection result of the re-detection object based on the updated confidence.

2. The method of claim 1, wherein,

by performing, by the target detection network, the object detection on the first image, position information corresponding to the target object is further obtained for defining a location area of the target object in the first image;

obtaining the object image involving the re-detection object from the first image comprises: based on the position information corresponding to the re-detection object, cropping a location area corresponding to the position information from the first image to obtain the object image involving the re-detection object.

3. The method of claim 1, wherein a lower limit of the preset threshold range is a first threshold and an upper limit of the preset threshold range is a second threshold; correcting the first classification confidence of the re-detection object based on the second classification confidence, to obtain the updated confidence comprises:

correcting the first classification confidence of the re-detection object based on the second classification confidence to determine the updated confidence within the preset threshold range; wherein,

higher the second classification confidence is, closer the updated confidence is to the second threshold;

lower the second classification confidence is, closer the updated confidence is to the first threshold.

4. The method of claim 3, wherein correcting the first classification confidence of the re-detection object based on the second classification confidence to determine the updated confidence within the preset threshold range, comprises:

determining a confidence increment within the preset threshold range based on the following: a difference between the second threshold and the first threshold, and the second classification confidence;

obtaining the updated confidence by adding the confidence increment on a basis of the first threshold.

5. The method of claim 3, wherein determining the classification detection result of the re-detection object based on the updated confidence comprises:

in a case that the updated confidence is lower than or equal to a third threshold, determining the re-detection object is a foreign thing other than the second classification; and/or

in a case that the updated confidence is within a range from a fourth threshold to the second threshold, determining the re-detection object is of the first classification;

wherein the third threshold is greater than or equal to the first threshold, while less than the second threshold;

the fourth threshold is less than or equal to the second threshold, while greater than the third threshold.

6. The method of claim 1, wherein correcting the first classification confidence of the re-detection object based on the second classification confidence, to obtain the updated confidence comprises:

performing weighted integration on the first classification confidence and the second classification confidence of the re-detection object to obtain the updated confidence.

7. The method of any of claims 1-6, wherein the first classification comprises one or more sub-classifications, each of the one or more filters is used for detecting a target object of one of the one or more sub-classifications;

performing, by the target detection network, the object detection on the first image, to obtain the first classification confidence of the target object involved in the first image comprises:

performing, by the target detection network, the object detection on the first image to obtain respective first sub-classification confidences, wherein each of the respective first

sub-classification confidence indicates a confidence that at least one target object involved in the first image belong to each of the sub-classifications;

performing an object detection on the object image with one or more filters, to determine the second classification confidence of the re-detection object comprises:

for any re-detection object, according to a target sub-classification corresponding to the re-detection object, inputting the object image corresponding to the re-detection object to a filter corresponding to the target sub-classification;

performing an object detection on the object image with the filter corresponding to the target sub-classification, to determine the second classification confidence of the re-detection object.

8. The method of any of claims 1-7, wherein the one or more filters are trained with a second image involving a target object of the second classification.

9. The method of claim 1, wherein

the second classification and the first classification are a same classification, or
the second classification comprises the first classification.

10. The method of claim 1, wherein the first image is a sample image for training the target detection network; after determining the classification detection result of the re-detection object based on the updated confidence, the method further comprises:

obtaining a loss between the classification detection result of the re-detection object and a corresponding classification label;

adjusting a network parameter of the target detection network based on the loss.

11. The method of claim 1, wherein

the first image is an image of a gaming place; and

the target object is a game item in the gaming place.

12. A method of target detection, comprising:

obtaining a to-be-processed image;

performing, by a target detection network, an object detection on the to-be-processed image to determine a first classification to which a target object involved in the to-be-processed image belongs, wherein

the target detection network is trained with the method of claim 10.

13. An apparatus for determining object classification, comprising:

a detecting module, configured to perform, by a target detection network, an object detection on a first image, to obtain a first classification confidence of a target object involved in the first image, wherein the first classification confidence indicates a confidence that the target object belongs to a first classification;

a re-detection module, configured to obtain an object image involving a re-detection object from the first image, and perform, by one or more filters, an object detection on the object image, to determine a second classification confidence of the re-detection object; wherein the re-detection object is a target object of which the first classification confidence is within a preset threshold range, and the second classification confidence indicates a confidence that the re-detection object belongs to a second classification;

a correcting module, configured to correct the first classification confidence of the re-detection object based on the second classification confidence, to obtain an updated confidence;

a classification determining module, configured to determine a classification detection result of the re-detection object based on the updated confidence.

14. The apparatus of claim 13, wherein

the detecting module is further configured to: by performing, by the target detection network, the object detection on the first image, position information corresponding to the target object is further obtained for defining a location area of the target object in the first image;

in a case that the re-detection module is configured to obtain an object image involving a re-detection object from the first image: based on the position information corresponding to the re-detection object, crop a location area corresponding to the position information from the first image to obtain the object image involving the re-detection object.

15. The apparatus of claim 13, wherein

in a case that the correcting module is configured to correct the first classification confidence of the re-detection object to obtain the updated confidence, correct the first classification confidence of the re-detection object based on the second classification confidence to determine the updated confidence within the preset threshold range; wherein, higher the second classification confidence is, closer the updated confidence is to the second threshold; lower the second classification confidence is, closer the updated confidence is to the first threshold; and a lower limit of the preset threshold range is a first threshold and an upper limit of the preset threshold range is a second threshold.

16. The apparatus of claim 13, wherein

in a case that the correcting module is configured to correct the first classification confidence of the re-detection object to obtain the updated confidence: perform weighted integration on the first classification confidence and the second classification confidence of the re-detection object to obtain the updated confidence.

17. The apparatus of any of claims 13-16, wherein

in a case that the detecting module is configured to perform, by the target detection network, the object detection on the first image, to obtain the first classification confidence of the target object involved in the first image, perform, by the target detection network, the object detection on the first image to obtain respective first sub-classification confidences, wherein each of the respective first sub-classification confidence indicates a confidence that at least one target object involved in the first image belong to each of the sub-classifications; wherein the first classification comprises one or more sub-classifications, each of the one or more filters is used for detecting a target object of one of the one or more sub-classifications;

in a case that the re-detection module is configured to perform, an object detection on the object image with one or more filter, to determine the second classification confidence of the re-detection object, for any re-detection object, according to a target sub-classification corresponding to the re-detection object, input the object image corresponding to the re-detection object to a filter corresponding to the target sub-classification; perform an object detection on the object image with the filter corresponding to the target sub-classification to determine the second classification confidence of the re-detection object.

18. An apparatus for target detection, comprising:

an image obtaining module, configured to obtain a to-be-processed image;

an identifying and processing module, configured to perform, by a target detection network, an object detection on the to-be-processed image to determine a first classification to which a target object involved in the to-be-processed image belongs, wherein the target detection network is trained with the method of claim 10.

19. An electronic device, comprising: a memory, a processor, wherein the memory is configured to store computer-readable instructions and the processor is configured to call the instructions to implement the method according to any of claims 1-11 or the method according to claim 12.

20. A computer readable storage medium, having a computer program stored thereon, wherein in a case that the computer program is executed by a processor, the method according to any of claims 1-11 is implemented, or the method according to claim 12 is implemented.