

CLAIMS

1. A method of controlling image acquisition, comprising:

providing a first image sample set to a first neural network;

selecting one or more first hard samples from the first image sample set according to a processing result of the first neural network for each first image sample in the first image sample set;

determining acquisition environment information of the first hard samples based on the one or more first hard samples; and

generating image acquisition control information according to the acquisition environment information, wherein the image acquisition control information is to instruct an acquisition of a second image sample set comprising one or more second hard samples.

2. The method of claim 1, wherein the first image sample set comprises a first image sample without label information.

3. The method of claim 2, wherein selecting the one or more first hard samples from the first image sample set according to the processing result of the first neural network for each first image sample in the first image sample comprises:

detecting whether the processing result of the first neural network for each first image sample in the first image sample set is correct or not;

determining the first hard sample according to a first image sample which is detected as corresponding to an incorrect processing result.

4. The method of claim 3, wherein

the first image sample set comprises a plurality of video frame samples consecutive in time sequence;

detecting whether the processing result of the first neural network for each first image sample in the first image sample set is correct or not comprises:

performing a target object continuity detection on target object detection results output by the first neural network for the plurality of video frame samples respectively, and

taking one or more of the target object detection results that do not meet a preset continuity requirement as the incorrect processing result.

5. The method of claim 3, further comprising:
providing the first image sample set to a second neural network,
wherein detecting whether the processing result of the first neural network for each first image sample in the first image sample set is correct or not comprises:

determining a difference between a second processing result of the second neural network for the first image sample and a first processing result of the first neural network for the first image sample;

in response to that the difference does not meet a preset difference requirement, taking the first processing result as the incorrect processing result.

6. The method of any one of claims 3 to 5, wherein determining the first hard sample according to a first image sample which is detected as corresponding to the incorrect processing result comprises:

obtaining an error type of the incorrect processing result;

taking a first image sample corresponding to the processing result of which the error type is a neural network processing error as the first hard sample.

7. The method of claim 6, wherein the first neural network is used to detect a target object in the first image sample, the method further comprises:

in response to that the error type of the incorrect processing result indicates that a target object bounding box obtained by the first neural network performing a detection on the first image sample is incorrect, adjusting a module which is comprised in the first neural network and for detecting the target object bounding box.

8. The method of claim 6, further comprising:

in response to that the error type of the incorrect processing result is related to a factor of camera device, sending promotion information of changing the camera device.

9. The method of any one of claims 1 to 8, wherein the acquisition environment information comprises at least one of: road section information, weather information and light intensity information.

10. The method of claim 9, wherein

the acquisition environment information comprises the road section information;
generating the image acquisition control information according to the acquisition environment information comprises:

determining an acquisition road section matching the first hard samples based on the road section information;

generating a data acquisition path with the determined acquisition road section;
and

comprising the data acquisition path in the image acquisition control information so to instruct a camera device to acquire the second image set according to the data acquisition path.

11. The method of any one of claim 1 to 10, further comprising:
adding the one or more first hard samples to a training sample set;
obtaining an adjusted first neural network by training the first neural network with the training sample set.

12. The method of claim 11, wherein
adding the one or more first hard samples to the training sample set comprises:
adding one or more first hard samples with label information to the training sample set;
obtaining the adjusted first neural network by training the first neural network with the training sample set comprises:
providing the one or more first hard samples with label information in the training sample set to the first neural network;
adjusting a parameter of the first neural network according to a difference between a processing result of the first neural network for each of the first hard samples with label information and corresponding label information, so as to obtain the adjusted first neural network.

13. The method of claim 11 or 12, further comprising:
obtaining the second image sample set;
providing the second image sample set to the adjusted first neural network;

selecting the one or more second hard samples from the second image sample set according to a processing result of the adjusted first neural network for each second image sample in the second image sample set.

14. An apparatus for controlling image acquisition, comprising:

a providing module, configured to provide a first image sample set to a first neural network;

a selecting module, configured to select one or more first hard samples from the first image sample set according to a processing result of the first neural network for each first image sample in the first image sample set;

an environment determining module, configured to determine acquisition environment information of the first hard samples based on the one or more first hard samples; and

an acquisition controlling module, configured to generate image acquisition control information according to the acquisition environment information, wherein the image acquisition control information is to instruct an acquisition of a second image sample set comprising one or more second hard samples.

15. The apparatus of claim 14, wherein the first image sample set comprises a first image sample without label information.

16. The apparatus of claim 15, wherein the selecting module comprises:

a first submodule, configured to detect whether the processing result of the first neural network for each first image sample in the first image sample set is correct or not;

a second submodule, configured to determine the first hard sample according to a first image sample which is detected as corresponding to an incorrect processing result.

17. The apparatus of claim 16, wherein

the first image sample set comprises a plurality of video frame samples consecutive in time sequence;

the first submodule is configured to:

perform a target object continuity detection on target object detection results output by the first neural network for the plurality of video frame samples respectively, and

take one or more of the target object detection results that do not meet a preset continuity requirement as the incorrect processing result.

18. An electronic device, comprising:

a memory for storing a computer program;

a processor for executing the computer program stored in the memory to implement the method of controlling image acquisition according to any one of claims 1 to 13.

19. A computer readable storage medium, storing a computer program thereon which is executable by a processor to implement the method of controlling image acquisition according to any one of claims 1 to 13.

20. A computer program, comprising computer instructions, wherein the computer instructions are executable by a processor to implement the method of controlling image acquisition according to any one of claims 1 to 13.