CLAIMS

1. An edge computing method, applied to an edge device, and comprising:

acquiring multiple channels of original videos of a target scenario;

performing synchronous access processing on the multiple channels of original videos to obtain multiple channels of synchronous videos, and acquiring multiple frames of synchronous images based on the multiple channels of synchronous videos;

performing computer vision collaborative analysis on the multiple frames of synchronous images to obtain a collaborative processing result; and

performing service logic processing with configuration information synchronized from a cloud server in advance and corresponding to the target scenario, as well as the collaborative processing result to obtain a service processing result;

wherein performing the computer vision collaborative analysis on the multiple frames of synchronous images to obtain the collaborative processing result comprises:

performing computer vision analysis on each frame of image among the multiple frames of synchronous images to obtain multiple image processing results in one-to-one correspondence with the multiple frames of synchronous images; and

performing duplication eliminating or both fusion and duplication eliminating on the multiple image processing results to obtain the collaborative processing result;

wherein performing the computer vision analysis on each frame of image among the multiple frames of synchronous images to obtain the multiple image processing results in the one-to-one correspondence with the multiple frames of synchronous images comprises:

extracting feature information of a target object from a first synchronous image, wherein the first synchronous image is any image among the multiple frames of synchronous images; and

determining a first image processing result corresponding to the first synchronous image based on the feature information, wherein the multiple image processing results comprises the first image processing result;

wherein determining the first image processing result corresponding to the first synchronous image based on the feature information comprises:

acquiring a feature information library in the cloud server;

searching feature information matching with the feature information from the feature information library; and

determining information associated with the found feature information in the feature information library as the first image processing result.

2. The method of claim 1, wherein acquiring the multiple frames of synchronous images based on the multiple channels of synchronous videos comprises:

acquiring images at a same moment from the multiple channels of synchronous videos to obtain multiple frames of to-be-processed images; and

preprocessing each frame of image among the multiple frames of to-be-processed images to obtain the multiple frames of synchronous images.

3. The method of claim 1, after performing the service logic processing with the collaborative processing result to obtain the service processing result, further comprising:

sending the service processing result to an output device, to output prompt information for the target scenario through the output device based on the service processing result.

4. The method of claim 1, after performing the service logic processing with the configuration

information synchronized from the cloud server in advance and corresponding to the target scenario, as well as the collaborative processing result to obtain the service processing result, further comprising:

sending the service processing result to the cloud server, for data analysis on the cloud server with the service processing result.

5. The method of claim 1, wherein in a case of multiple edge devices, multiple service processing results are provided correspondingly, and after performing the service logic processing with the configuration information synchronized from the cloud server in advance and corresponding to the target scenario, as well as the collaborative processing result to obtain the service processing result, the method further comprises:

sending the multiple service processing results to the cloud server, for data analysis on the cloud server with the multiple service processing results.

6. The method of claim 1, after performing the service logic processing with the configuration information synchronized from the cloud server in advance and corresponding to the target scenario, as well as the collaborative processing result to obtain the service processing result, further comprising:

storing the service processing result in a case where the cloud server is in a fault state; and

sending the analysis processing result to the cloud server in a case where the cloud server is converted from the fault state into a normal state.

7. The method of claim 1, after performing the synchronous access processing on the multiple channels of original videos to obtain the multiple channels of synchronous videos, further comprising:

encoding the multiple channels of synchronous videos to one channel of video to obtain an encoded video; and

sending the encoded video to a video storage device at a same network segment with the edge device for storage.

8. The method of claim 7, after performing the service logic processing with the configuration information synchronized from the cloud server in advance and corresponding to the target scenario, as well as the collaborative processing result to obtain the service processing result, further comprising:

acquiring a play link corresponding to the encoded video, and writing the play link into the service processing result.

9. An edge device, comprising: a central processor, a graphics processor, a memory and a communication bus, wherein

the communication bus is configured to implement connection and communication among the central processor, the graphics processor and the memory;

the central processor and the graphics processor are configured to execute one or more programs stored in the memory, to implement following steps:

acquiring multiple channels of original videos of a target scenario;

performing synchronous access processing on the multiple channels of original videos to obtain multiple channels of synchronous videos, and acquiring multiple frames of synchronous images based on the multiple channels of synchronous videos;

performing computer vision collaborative analysis on the multiple frames of synchronous images to obtain a collaborative processing result; and

performing service logic processing with configuration information synchronized from

a cloud server in advance and corresponding to the target scenario, as well as the collaborative processing result to obtain a service processing result;

wherein for the step of performing the computer vision collaborative analysis on the multiple frames of synchronous images to obtain the collaborative processing result, the central processor and the graphics processor are configured to implement following steps:

performing computer vision analysis on each frame of image among the multiple frames of synchronous images to obtain multiple image processing results in one-to-one correspondence with the multiple frames of synchronous images; and

performing duplication eliminating or both fusion and duplication eliminating on the multiple image processing results to obtain the collaborative processing result;

wherein for the step of performing the computer vision analysis on each frame of image among the multiple frames of synchronous images to obtain the multiple image processing results in the one-to-one correspondence with the multiple frames of synchronous images, the central processor and the graphics processor are configured to implement following steps:

extracting feature information of a target object from a first synchronous image, wherein the first synchronous image is any image among the multiple frames of synchronous images; and

determining a first image processing result corresponding to the first synchronous image based on the feature information, wherein the multiple image processing results comprises the first image processing result;

wherein for the step of determining the first image processing result corresponding to the first synchronous image based on the feature information, the central processor and the graphics processor are configured to implement following steps:

acquiring a feature information library in the cloud server;

searching feature information matching with the feature information from the feature information library; and

determining information associated with the found feature information in the feature information library as the first image processing result.

10. The edge device of claim 9, wherein for the step of acquiring the multiple frames of synchronous images based on the multiple channels of synchronous videos, the central processor and the graphics processor are configured to implement following steps:

acquiring images at a same moment from the multiple channels of synchronous videos to obtain multiple frames of to-be-processed images; and

preprocessing each frame of image among the multiple frames of to-be-processed images to obtain the multiple frames of synchronous images.

11. The edge device of claim 9, after the step of performing the service logic processing with the collaborative processing result to obtain the service processing result, the central processor and the graphics processor are further configured to implement a following step:

sending the service processing result to an output device, to output prompt information for the target scenario through the output device based on the service processing result.

12. The edge device of claim 9, after the step of performing the service logic processing with the configuration information synchronized from the cloud server in advance and corresponding to the target scenario, as well as the collaborative processing result to obtain the service processing result, the central processor and the graphics processor are further configured to implement a following step:

sending the service processing result to the cloud server, for data analysis on the cloud server with the service processing result.

13. A nonvolatile computer-readable storage medium, storing one or more programs, wherein the one or more programs are executable by one or more processors, to implement the edge computing method of any one of claims 1 to 8.

14. A computer program, applied to an edge device, wherein the computer program executable by one or more processors, to implement the edge computing-based control method of any one of claims 1 to 8.