

Claims

1. A video processing method based on augmented reality, comprising:

acquiring an image captured by a device, and recognizing a target object from the captured image;

5 searching for a video file corresponding to the target object, wherein the video file has a specified background color and does not contain an alpha channel;

recognizing, with regard to a video frame of the video file, a foreground portion and a background portion of the video frame;

10 processing the background portion of the video frame to make the background portion of the video frame transparent by configuring alpha channel values for pixels corresponding to the foreground portion and pixels corresponding to the background portion of the video frame wherein configuring the alpha channel values comprises:

15 determining values of distances each between a color vector of the specified background color of the video file and a color vector of each of the pixels corresponding to the foreground portion and each of the pixels corresponding to the background portion of the video frame,

modifying the values of the distances within a range, and

20 interpolating the modified values of the distances to obtain the alpha channel values for the pixels corresponding to the foreground portion and the pixels corresponding to the background portion of the video frame;

determining a position of the foreground portion in the currently captured image based at least on changing the background portion of the video frame to transparent; and

25 synthesizing, after determining a position of the foreground portion in the currently captured image, the processed video frame with the currently captured image based on the position of the foreground portion of the video frame in the image to obtain a synthesized video frame.

2. The method according to claim 1, wherein

30 the recognizing a foreground portion and a background portion of the video frame comprises:

calculating the color vectors of the pixels corresponding to the foreground portion and the pixels corresponding to the background portion of the video frame;

calculating the color vector of the specified background color; and

comparing the color vector of the specified background color with the color vectors of

the pixels of the video frame, to recognize the foreground portion and the background portion of the video frame.

3. The method according to claim 1, wherein the steps of recognizing, with regard to a
5 video frame of the video file, a foreground portion and a background portion of the video frame, and processing the background portion of the video frame to make the background portion of the video frame transparent is performed by a graphics processor.

4. The method according to claim 1, further comprising:
10 acquiring a virtual component corresponding to the target object; and
the synthesizing, after determining a position of the foreground portion in a currently captured image, the processed video frame with the currently captured image to obtain a synthesized video frame comprises:

synthesizing, after respectively determining the position of the foreground portion and a
15 position of the virtual component in the currently captured image, the processed video frame and the virtual component with the currently captured image.

5. The method according to claim 1, wherein the target object includes a
merchant-related image provided in advance by a target merchant; and
20 the recognizing a target object from the captured image comprises:
comparing the captured image with the merchant-related image and recognizing the target object from the captured image according to a result of the comparison.

6. A video processing apparatus based on augmented reality, comprising:
25 an recognizing module, configured to acquire an image captured by a device, and recognize a target object from the captured image;

a searching module, configured to search for a video file corresponding to the target object, wherein the video file has a specified background color and does not contain an alpha channel;

30 a processing module, configured to recognize, with regard to a video frame of the video file, a foreground portion and a background portion of the video frame:

process the background portion of the video frame to make the background portion of the video frame transparent by configuring alpha channel values for pixels corresponding to the foreground portion and pixels corresponding to the background portion of the video frame

wherein configuring the alpha channel values comprises:

- 5 determining values of distances each between a color vector of the specified background color of the video file and a color vector of each of the pixels corresponding to the foreground portion and each of the pixels corresponding to the background portion of the video frame,
- modifying the values of the distances within a range, and
- interpolating the modified values of the distances to obtain the alpha channel values for the pixels corresponding to the foreground portion and the pixels corresponding to the background portion of the video frame;
- 10 determining a position of the foreground portion in the currently captured image based at least on changing the background portion of the video frame to transparent; and
- a synthesizing module, configured to synthesize, after determining a position of the foreground portion in the currently captured image, the processed video frame with the currently captured image based on the position of the foreground portion of the video frame
- 15 in the image to obtain a synthesized video frame.

7. The apparatus according to claim 6, wherein the video file is a video file with a specified background color; and

- the recognizing module is further configured to:
- 20 calculate the color vectors of the pixels corresponding to the foreground portion and the pixels corresponding to the background portion of the video frame;
- calculate the color vector of the specified background color; and
- compare the color vector of the specified background color with the color vectors of the pixels of the video frame, to recognize the foreground portion and the background portion of
- 25 the video frame.

8. The apparatus according to claim 6, wherein the processing module operates in a graphics processor.

- 30 9. The apparatus according to claim 6, further comprising:
- an acquiring module, configured to acquire a virtual component corresponding to the target object; and
- the synthesizing module is further configured to:
- synthesize, after respectively determining the position of the foreground portion and a

position of the virtual component in the currently captured image, the processed video frame and the virtual component with the currently captured image.

10. The apparatus according to Claim 6, wherein the target object includes a
5 merchant-related image provided in advance by a target merchant; and
the recognizing module is further configured to:
compare the captured image with the merchant-related image and recognize the target
object from the captured image according to a result of the comparison.

10 11. An electronic device, comprising:
a processor; and
a memory, configured to store processor-executable instructions, wherein
the processor is configured to:
15 acquire an image captured by a device, and recognize a target object from the captured
image;

search for a video file corresponding to the target object, wherein the video file has a
specified background color and does not contain an alpha channel;

recognize, with regard to a video frame of the video file, a foreground portion and a
background portion of the video frame;

20 process the background portion of the video frame to make the background portion of
the video frame transparent by configuring alpha channel values for pixels corresponding to
the foreground portion and pixels corresponding to the background portion of the video frame
wherein configuring the alpha channel values comprises:

25 determining values of distances each between a color vector of the specified
background color of the video file and a color vector of each of the pixels corresponding
to the foreground portion and each of the pixels corresponding to the background portion
of the video frame,

modifying the values of the distances within a range, and

30 interpolating the modified values of the distances to obtain the alpha channel values
for the pixels corresponding to the foreground portion and the pixels corresponding to the
background portion of the video frame;

determining a position of the foreground portion in the currently captured image based
at least on changing the background portion of the video frame to transparent; and

synthesize, after determining a position of the foreground portion in the currently

captured image, the processed video frame with the currently captured image based on the position of the foreground portion of the video frame in the image to obtain a synthesized video frame.

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