CLAIMS

1. An image processing method, comprising:

acquiring a to-be-processed image from video streaming, wherein the to-be-processed image is in an RGB format;

converting the to-be-processed image into a first image in a YUV format, and extracting data for a Y component of the first image;

generating a correction parameter for pixels in the first image based on the data for the Y component of the first image;

performing gamma correction on the data for the Y component for the pixels based on the correction parameter to obtain corrected data;

replacing the data for the Y component with the corrected data to obtain a second image, and converting the second image into a processed image in the RGB format;

inputting the processed image and an optimized image of a previous image into an evaluation model to obtain an evaluation parameter indicating a brightness difference between the processed image and the optimized image; and

if the evaluation parameter is beyond a target range, determining the processed image as an optimized image corresponding to the to-be-processed image; or if the evaluation parameter is within the target range, updating the correction parameter, performing the gamma correction on the data for the Y component for the pixels based on the updated correction parameter to update the corrected data, updating the processed image with the updated corrected data, updating the evaluation parameter with the updated processed image, until the evaluation parameter is beyond the target range, and determining the updated processed image as the optimized image,

wherein the target range indicates that a brightness of the processed image is inconsistent with the optimized image of the previous image, and the brightness difference is large.

2. The image processing method according to claim 1, wherein the acquiring the to-be-processed image from the video streaming comprises:

acquiring an initial image from the video streaming based on the previous image, and

normalizing the initial image to obtain a normalized image;

mapping the normalized image onto a linear color space to obtain a first transition image;

heightening contrast for each color component in the first transition image to obtain a second transition image;

mapping the second transition image onto a gamma color space to obtain a third transition image; and

de-normalizing the third transition image to obtain the to-be-processed image.

3. The image processing method according to claim 1, wherein the generating the correction parameter for the pixels in the first image based on the data for the Y component of the first image comprises:

ranking the data for the Y component for the pixels in order of sizes or frequencies to obtain a data queue; and

determining target data corresponding to a preset proportion in the data queue as the correction parameter.

4. The image processing method according to claim 1, wherein the generating the correction parameter for the pixels in the first image based on the data for the Y component of the first image comprises:

determining respective adjacent ranges for the pixels;

ranking the data for the Y component of the pixels and adjacent pixels within the respective adjacent ranges in order of sizes or frequencies to obtain a data queue; and

determining target data corresponding to a preset proportion in the data queue as the correction parameter.

5. The image processing method according to claim 1, wherein the performing the gamma correction on the data for the Y component for the pixels based on the correction parameter to obtain the corrected data comprises:

generating a power inversely proportional to a difference between maximum brightness and the correction parameter based on the difference, and performing the gamma correction on the data for the Y component based on the power to obtain the corrected data.

6. The image processing method according to claim 5, wherein the generating the power inversely proportional to the difference between maximum brightness and the correction parameter based on the difference and performing the gamma correction on the data for the Y component based on the power to obtain the corrected data comprises:

generating the difference between the maximum brightness and the correction parameter, wherein the difference is greater than zero;

generating the power based on the difference and a preset threshold, wherein the power is inversely proportional to the difference and is greater than zero;

solving a power function, wherein a base of the power function is a ratio of the data for the Y component to the maximum brightness and an exponent of the power function is the power; and

multiplying the solution of the power function by the maximum brightness to obtain the corrected data.

7. The image processing method according to claim 1, wherein the updating the correction parameter comprises:

decreasing the correction parameter if the processed image is darker than the optimized image of the previous image; and

increasing the correction parameter if the processed image is brighter than the optimized image of the previous image.

8. The image processing method according to claim 1, further comprising:

outputting the processed image visually; and

acquiring user feedback on the processed image, generating training data based on the user feedback, and training the evaluation model with the training data.

9. The image processing method according to claim 1 further comprising:

generating optimized video streaming from processed images of all images in the video streaming and outputting the optimized video streaming visually.

10. An electronic device comprising:

a memory configured to store a computer program; and

a processor configured to execute the computer program to implement the image processing method according to any one of claims 1 to 9.

11. A computer-readable medium storing a computer program that, when executed by a processor, implements the image processing method according to any one of claims 1 to 9.