

CLAIMS

1. An image processing method, comprising:

determining a first region matching a target object in a first image;

determining a deformation parameter based on a preset deformation effect, the deformation parameter being used for determining a position deviation, generated based on the preset deformation effect, for each pixel point of the target object; and

performing deformation processing on the target object in the first image based on the deformation parameter to obtain a second image.

2. The method according to claim 1, wherein determining the first region matching the target object in the first image comprises:

forming a first mesh corresponding to the target object, the first mesh matching the first region.

3. The method according to claim 1 or 2, wherein the deformation parameter is a deformed pixel matrix, and each parameter in the deformed pixel matrix is used for determining a position deviation, generated based on the preset deformation effect, for a corresponding pixel point of the target object.

4. The method according to any one of claims 1 to 3, wherein determining the first region matching the target object in the first image comprises:

determining positions of feature points of the target object in the first image; and

determining the first region based on relative positions between the feature points.

5. The method according to any one of claims 1 to 4, wherein determining the deformation parameter based on the preset deformation effect comprises:

determining whether a preset deformation template exists; and

in response to determining that the preset deformation template exists, determining the deformation parameter based on the preset deformation template by using a preset algorithm.

6. The method according to claim 5, wherein determining the deformation parameter based on the preset deformation effect further comprises:

in response to determining that the preset deformation template does not exist, obtaining a second mesh for image deformation, the second mesh being a deformed mesh; and

determining the deformation parameter by using a preset algorithm and second positions

of second pixel points in the second mesh.

7. The method according to claim 5 or 6, wherein determining whether the preset deformation template exists comprises:

when a first instruction for performing a deformation operation based on a preset deformation image is received, determining that the preset deformation template exists.

8. The method according to any one of claims 5 to 7, wherein determining the deformation parameter based on the preset deformation effect comprises:

determining a third mesh matching a deformation region of the preset deformation template;

taking four vertices of each sub-mesh in the third mesh as four control points, and determining a third position of each first pixel point in the third mesh before deformation based on the preset algorithm and the four control points in each sub-mesh; and

determining the deformation parameter based on the third position of each first pixel point before deformation and a fourth position corresponding to the first pixel point in the third mesh.

9. The method according to claim 6, wherein determining the deformation parameter by using the preset algorithm and the second positions of the second pixel points in the second mesh comprises:

taking four vertices of each sub-mesh in the second mesh as four control points;

determining a first position of each second pixel point in the second mesh before deformation based on the preset algorithm; and

determining the deformation parameter based on the first position of each second pixel point before deformation and a second position corresponding to the second pixel point in the second mesh.

10. The method according to claim 6, wherein obtaining the second mesh for image deformation comprises:

receiving a deformation operation on the first region and obtaining the second mesh based on the deformation operation; or

obtaining a stored second mesh.

11. The method according to claim 3, further comprising:

adjusting dimension of the deformed pixel matrix based on a number of pixel points in a

length direction and a number of pixel points in a width direction for the first region to obtain a deformed pixel matrix subjected to dimension adjustment, so that pixel points in the deformed pixel matrix have one-to-one correspondence to pixel points in the first region, and

obtaining the second image by using the deformed pixel matrix subjected to dimension adjustment.

12. The method according to any one of claims 1 to 11, wherein performing deformation processing on the target object in the first image based on the deformation parameter to obtain the second image comprises:

adjusting a position of a corresponding pixel point on the target object based on the position deviation of each pixel point in the deformation parameter by using a linear interpolation algorithm.

13. The method according to claim 4, wherein the target object comprises a face, and

wherein determining the first region based on the relative positions between the feature points comprises:

determining a nose bridge center as a center of the first region;

determining a width of the first region based on a distance between outer edges of the eyes; and

determining a height of the first region based on a distance between an eyebrow center and a nose tip.

14. The method according to claim 2, wherein forming the first mesh corresponding to the target object comprises:

determining the first mesh matching a position and size of the target object in the first image, the first mesh being equally divided into a plurality of sub-meshes.

15. An image processing apparatus, comprising:

a first determining module, configured to determine a first region matching a target object in a first image;

a second determining module, configured to determine a deformation parameter based on a preset deformation effect, the deformation parameter being used for determining a position deviation, generated based on the preset deformation effect, for each pixel point of the target object; and

a deformation module, configured to perform deformation processing on the target object

in the first image based on the deformation parameter to obtain a second image.

16. The apparatus according to claim 15, wherein the first determining module is further configured to determine the first region by forming a first mesh corresponding to the target object, the first mesh matching the first region.

17. The apparatus according to claim 15 or 16, wherein the deformation parameter is a deformed pixel matrix, and each parameter in the deformed pixel matrix is used for determining a position deviation, generated based on the preset deformation effect, for a corresponding pixel point of the target object.

18. An electronic device, comprising:

a processor; and

a memory configured to store instructions executable by the processor;

wherein the processor is configured to execute the image processing method according to any one of claims 1 to 14.

19. A computer-readable storage medium having computer program instructions stored thereon, wherein the computer program instructions, when being executed by a processor, implement the image processing method according to any one of claims 1 to 14.

20. A computer program, comprising computer-readable codes, wherein when the computer-readable codes are run in an electronic device, a processor in the electronic device implements the method according to any one of claims 1 to 14.