

CLAIMS

1. A method for image processing, comprising:

obtaining a first image, identifying a target object in the first image, and obtaining leg detection information of the target object;

respectively determining a contour line and a target line of a leg region of the target object based on the leg detection information; and

performing image deformation processing on the leg region based on the contour line and the target line of the leg region to generate a second image.

2. The method according to claim 1, wherein the leg detection information comprises leg contour point information and leg key point information; and

respectively determining the contour line and the target line of the leg region of the target object based on the leg detection information comprises:

determining the contour line of the leg region of the target object based on the leg contour point information and determining the target line of the leg region based on the leg key point information.

3. The method according to claim 1, wherein the leg detection information comprises leg contour point information; and

respectively determining the contour line and the target line of the leg region of the target object based on the leg detection information comprises:

determining the contour line of the leg region of the target object based on the leg contour point information; and

determining a central point of the leg region based on the leg contour point information, determining a central line based on the determined central point, and determining the central line as the target line.

4. The method according to any one of claims 1 to 3, wherein performing image deformation processing on the leg region based on the contour line and the target line of the leg region comprises:

performing compression processing on the leg region according to a direction from the contour line to the target line or performing stretching processing on the leg region according

to a direction from the target line to the contour line.

5. The method according to any one of claims 1 to 4, wherein performing image deformation processing on the leg region based on the contour line and the target line of the leg region comprises:

determining a plurality of sub-regions of the leg region; and

performing, based on the contour line and the target line of each sub-region, image deformation processing according to a deformation parameter corresponding to the sub-region, wherein deformation parameters of adjacent sub-regions are different.

6. The method according to claim 5, wherein the plurality of sub-regions comprise a first sub-region and a second sub-region; the first sub-region and the second sub-region correspond to a thigh region of the leg region; the first sub-region is closer to a waist region of the target object than the second sub-region; and

the deformation parameter is a deformation proportion; and a first deformation proportion corresponding to the first sub-region is less than a second deformation proportion corresponding to the second sub-region.

7. The method according to claim 6, wherein the leg region further comprises a third sub-region corresponding to a knee region; and a third deformation proportion corresponding to the third sub-region is less than the second deformation proportion corresponding to the second sub-region.

8. The method according to claim 6 or 7, wherein the plurality of sub-regions comprise a fourth sub-region and a fifth sub-region; the fourth sub-region and the fifth sub-region correspond to a shank region of the leg region; the fifth sub-region is closer to a foot region of the target object than the fourth sub-region; and

a fourth deformation proportion corresponding to the fourth sub-region is greater than a fifth deformation proportion corresponding to the fifth sub-region.

9. The method according to any one of claims 1 to 8, before performing image deformation processing on the leg region based on the contour line and the target line of the leg region,

further comprising:

- determining a distance between two leg regions of the target object and determining whether the distance satisfies a preset condition; and

- performing image deformation processing on the leg region based on the contour line and the target line of the leg region comprises:

- performing image deformation processing on the leg region based on the contour line and the target line of the leg region when the distance satisfies the preset condition.

10. The method according to claim 9, wherein determining whether the distance satisfies the preset condition comprises:

- obtaining a width of a specific region of the target object;

- determining whether the distance is greater than the width of the specific region;

- determining that the distance satisfies the preset condition in the case that a first distance is greater than the width of the specific region; and

- determining that the distance does not satisfy the preset condition in the case that the first distance is not greater than the width of the specific region.

11. The method according to claim 9 or 10, wherein determining the distance between the two leg regions of the target object comprises:

- determining knee key point information in the leg region based on leg key point information of the target object; and

- determining, based on the knee key point information, a first distance between two knees respectively corresponding to the two leg regions; and

- determining whether the distance satisfies the preset condition comprises: determining whether the first distance satisfies the preset condition.

12. The method according to claim 10 or 11, wherein the specific region is a region corresponding to a body part comprised in the target object; and

- the specific region is one of the following regions: a head region, a neck region, a shoulder region, a chest region, a waist region, and a hip region.

13. The method according to any one of claims 9 to 12, further comprising:

identifying a leg outer contour line and a leg inner contour line in contour lines of the leg region according to the leg detection information when the distance does not satisfy the preset condition; and

performing compression processing on the leg region in a direction from the leg outer contour line to the leg inner contour line, for the leg outer contour line; or performing stretching processing in a direction from the leg inner contour line to the leg outer contour line, for the leg outer contour line.

14. An apparatus for image processing, comprising: a detection unit and a deformation processing unit, wherein

the detection unit is configured to obtain a first image, identify a target object in the first image, and obtain leg detection information of the target object; and respectively determine a contour line and a target line of a leg region of the target object based on the leg detection information; and

the deformation processing unit is configured to perform image deformation processing on the leg region based on the contour line and the target line of the leg region determined by the detection unit to generate a second image.

15. The apparatus according to claim 14, wherein the leg detection information comprises leg contour point information and leg key point information; and

the detection unit is configured to determine the contour line of the leg region of the target object based on the leg contour point information and determine the target line of the leg region based on the leg key point information,

or,

wherein the leg detection information comprises leg contour point information; and

the detection unit is configured to determine the contour line of the leg region of the target object based on the leg contour point information; and determine a central point of the leg region based on the leg contour point information, determine a central line based on the determined central point, and determine the central line as the target line.

16. The apparatus according to any one of claims 14 to 15, wherein the deformation processing unit is configured to perform compression processing on the leg region according

to a direction from the contour line to the target line or perform stretching processing on the leg region according to a direction from the target line to the contour line.

17. The apparatus according to any one of claims 14 to 16, wherein the deformation processing unit is configured to determine a plurality of sub-regions of the leg region; and perform, based on the contour line and the target line of each sub-region, image deformation processing according to a deformation parameter corresponding to the sub-region, wherein deformation parameters of adjacent sub-regions are different.

18. The apparatus according to claim 17, wherein the plurality of sub-regions comprise a first sub-region and a second sub-region; the first sub-region and the second sub-region correspond to a thigh region of the leg region; the first sub-region is closer to a waist region of the target object than the second sub-region; and

the deformation parameter is a deformation proportion; and a first deformation proportion corresponding to the first sub-region is less than a second deformation proportion corresponding to the second sub-region.

19. A computer-readable storage medium, having stored thereon a computer program that, when executed by a processor, causes the processor to perform steps of the method according to any one of claims 1 to 13.

20. An apparatus for image processing, comprising a memory, a processor, and a computer program stored on the memory and capable of being run on the processor, wherein the computer program, when executed by the processor, performs steps of the method according to any one of claims 1 to 13.