

WHAT IS CLAIMED IS:

1. An image processing method, comprising:

performing detection on an image to be processed to determine a contour line of a target object in the image to be processed and a plurality of regions of the target object;

determining, for a target region in the plurality of regions, first adjustment parameters of a plurality of target pixel points in the target region according to set parameters, wherein the plurality of target pixel points comprises a first pixel point on the contour line and a third pixel point inside the contour line;

determining, for the target region, second adjustment parameters of a second pixel point outside the contour line according to the first adjustment parameters; and

adjusting the image to be processed according to the first adjustment parameters and the second adjustment parameters to obtain an adjusted image.

2. The method according to claim 1, wherein the first adjustment parameters comprise a first adjustment direction and a first adjustment amplitude of the first pixel point, and a third adjustment direction and a third adjustment amplitude of the third pixel point, and the second adjustment parameters comprise a second adjustment direction and a second adjustment amplitude of the second pixel point.

3. The method according to claim 2, further comprising:

performing detection on the image to be processed to obtain a target point of the target object in the image to be processed, wherein the target point is located inside or on the contour line, and the target point corresponds to the first pixel point,

wherein the first adjustment direction of the first pixel point comprises a direction close to or away from the target point.

4. The method according to claim 2 or 3, wherein determining, for the target region in the plurality of regions, the first adjustment parameters of the plurality of target pixel points in the

target region according to the set parameters comprises:

determining the first adjustment direction and the first adjustment amplitude of the first pixel point according to the set parameters and the target point; and

determining a third adjustment direction and a third adjustment amplitude of each third pixel point within a preset range around each first pixel point according to the first adjustment direction and the first adjustment amplitude; or

determining a first adjustment direction and a first adjustment amplitude of each first pixel point according to the set parameters and the target point; and

determining the third adjustment direction and the third adjustment amplitude of the third pixel point according to the first adjustment direction and the first adjustment amplitude of a first pixel point closest to the third pixel point.

5. The method according to any one of claims 2 to 4, wherein determining, for the target region, the second adjustment parameters of the second pixel point outside the contour line according to the first adjustment parameters comprises:

determining a second adjustment direction and a second adjustment amplitude of each second pixel point within a preset range around each first pixel point according to the first adjustment direction and the first adjustment amplitude of the first pixel point; or

determining the second adjustment direction and the second adjustment amplitude of the second pixel point according to the first adjustment direction and the first adjustment amplitude of a first pixel point closest to the second pixel point.

6. The method according to any one of claims 2 to 5, wherein the second adjustment amplitude of the second pixel point is smaller than the first adjustment amplitude, and the second adjustment amplitude of the second pixel point is negatively correlated with a first reference distance,

wherein the first reference distance is a distance between the second pixel point and the first pixel point.

7. The method according to any one of claims 2 to 6, wherein the third adjustment amplitude of the

third pixel point is smaller than the first adjustment amplitude, and the third adjustment amplitude of the third pixel point is negatively correlated with a second reference distance,

wherein the second reference distance is a distance between the third pixel point and the first pixel point.

8. The method according to any one of claims 2 to 7, wherein if the distance between the second pixel point and the first pixel point is equal to the distance between the third pixel point and the first pixel point, the second adjustment amplitude of the second pixel point is smaller than the third adjustment amplitude of the third pixel point.

9. The method according to any one of claims 2 to 8, wherein determining, for the target region in the plurality of regions, the first adjustment parameters of the plurality of target pixel points in the target region according to the set parameters comprises one of:

if the first adjustment direction is the direction close to the target point, determining the third adjustment direction as a direction close to the target point; and

if the first adjustment direction is the direction away from the target point, determining the third adjustment direction as a direction away from the target point;

wherein determining, for the target region, the second adjustment parameters of the second pixel point outside the contour line according to the first adjustment parameters comprises one of:

if the first adjustment direction is the direction close to the target point, determining the second adjustment direction as a direction close to the target point; and

if the first adjustment direction is the direction away from the target point, determining the second adjustment direction as a direction away from the target point.

10. An image processing apparatus, comprising:

a detecting module, configured to perform detection on an image to be processed to determine a contour line of a target object in the image to be processed and a plurality of regions of the target object;

a first adjustment parameter determining module, configured to determine, for a target region in the plurality of regions, first adjustment parameters of a plurality of target pixel points in the target region according to set parameters, wherein the plurality of target pixel points comprises a first pixel point on the contour line and a third pixel point inside the contour line;

a second adjustment parameter determining module, configured to determine, for the target region, second adjustment parameters of a second pixel point outside the contour line according to the first adjustment parameters; and

an image processing module, configured to adjust the image to be processed according to the first adjustment parameters and the second adjustment parameters to obtain an adjusted image.

11. The apparatus according to claim 10, wherein the first adjustment parameters comprise a first adjustment direction and a first adjustment amplitude of the first pixel point, and a third adjustment direction and a third adjustment amplitude of the third pixel point, and the second adjustment parameters comprise a second adjustment direction and a second adjustment amplitude of the second pixel point.

12. The apparatus according to claim 11, further comprising:

a target point obtaining module, configured to perform detection on the image to be processed to obtain a target point of the target object in the image to be processed, wherein the target point is located inside or on the contour line, and the target point corresponds to the first pixel point,

wherein the first adjustment direction of the first pixel point comprises a direction close to or away from the target point.

13. The apparatus according to claim 11 or 12, wherein the first adjustment parameter determining module comprises:

a first determining sub-module, configured to determine the first adjustment direction and the first adjustment amplitude of the first pixel point according to the set parameters and the target point; and

a second determining sub-module, configured to determine a third adjustment direction and a third adjustment amplitude of each third pixel point within a preset range around each first pixel point according to the first adjustment direction and the first adjustment amplitude; or

a third determining sub-module, configured to determine a first adjustment direction and a first adjustment amplitude of each first pixel point according to the set parameters and the target point; and

a fourth determining sub-module, configured to determine the third adjustment direction and the third adjustment amplitude of the third pixel point according to the first adjustment direction and the first adjustment amplitude of a first pixel point closest to the third pixel point.

14. The apparatus according to any one of claims 11 to 13, wherein the second adjustment parameter determining module comprises:

a fifth determining sub-module, configured to determine a second adjustment direction and a second adjustment amplitude of each second pixel point within a preset range around each first pixel point according to the first adjustment direction and the first adjustment amplitude of the first pixel point; or

a sixth determining sub-module, configured to determine the second adjustment direction and the second adjustment amplitude of the second pixel point according to the first adjustment direction and the first adjustment amplitude of a first pixel point closest to the second pixel point.

15. The apparatus according to any one of claims 11 to 14, wherein the second adjustment amplitude of the second pixel point is smaller than the first adjustment amplitude, and the second adjustment amplitude of the second pixel point is negatively correlated with a first reference distance,

wherein the first reference distance is a distance between the second pixel point and the first pixel point.

16. The apparatus according to any one of claims 11 to 15, wherein the third adjustment amplitude of the third pixel point is smaller than the first adjustment amplitude, and the third adjustment amplitude of the third pixel point is negatively correlated with a second reference distance,

wherein the second reference distance is a distance between the third pixel point and the first pixel point.

17. The apparatus according to any one of claims 11 to 16, wherein if the distance between the second pixel point and the first pixel point is equal to the distance between the third pixel point and the first pixel point, the second adjustment amplitude of the second pixel point is smaller than the third adjustment amplitude of the third pixel point.

18. The apparatus according to any one of claims 11 to 17, wherein the first adjustment parameter determining module comprises one of:

- a first direction determining sub-module, configured to determine the third adjustment direction as a direction close to the target point if the first adjustment direction is the direction close to the target point; and

- a second direction determining sub-module, configured to determine the third adjustment direction as a direction away from the target point if the first adjustment direction is the direction away from the target point;

wherein the second adjustment parameter determining module comprises one of:

- a third direction determining sub-module, configured to determine the second adjustment direction as a direction close to the target point if the first adjustment direction is the direction close to the target point; and

- a fourth direction determining sub-module, configured to determine the second adjustment direction as a direction away from the target point if the first adjustment direction is the direction away from the target point.

19. An electronic device, comprising:

- a processor; and

- a memory configured to store processor-executable instructions;

- wherein the processor is configured to execute the method according to any one of claims

1 to 9.

20. A computer-readable storage medium, having computer program instructions stored thereon, wherein when the computer program instructions are executed by a processor, the method according to any one of claims 1 to 9 is implemented.