

CLAIMS

1. An image processing method, comprising:

performing inspection on an image to be processed, and determining 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 selected first region in the plurality of regions, first adjustment parameters of a plurality of target pixel points in the first 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 a second region adjacent to the first region in the plurality of regions, second adjustment parameters of a plurality of reference pixel points in the second region, wherein the plurality of reference pixel points comprises a second pixel point on the contour line and a fourth pixel point inside the contour line; and

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

2. The method according to claim 1, wherein the determining, for a second region adjacent to the first region in the plurality of regions, second adjustment parameters of a plurality of reference pixel points in the second region comprises:

determining, for the second region adjacent to the first region in the plurality of regions, the second adjustment parameters of the plurality of reference pixel points in the second region according to the first adjustment parameters.

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

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

performing inspection on the image to be processed, and determining a first target point and a second target point of the target object in the image to be processed,

wherein the first target point and the second target point are located inside or on the contour line, the first target point corresponds to the first pixel point, and the second target point corresponds to the second pixel point,

wherein the first adjustment direction comprises a direction coming close to or moving away from the first target point, and the second adjustment direction comprises a direction coming close to or moving away from the second target point.

5. The method according to claim 4, wherein the first adjustment parameters further comprise a third adjustment direction and a third adjustment amplitude of the third pixel point.

6. The method according to claim 5, wherein the determining, for a selected first region in the plurality of regions, first adjustment parameters of a plurality of target pixel points in the first region according to 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 first target point; and

determining the third adjustment direction and the 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.

7. The method according to claim 5, wherein the determining, for a selected first region in the plurality of regions, first adjustment parameters of a plurality of target pixel points in the first region according to set parameters comprises:

determining the first adjustment direction and the first adjustment amplitude of each first pixel point according to the set parameters and the first 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.

8. The method according to any one of claims 3 to 7, wherein the second adjustment parameters further comprise a fourth adjustment direction and a fourth adjustment

amplitude of the fourth pixel point.

9. The method according to claim 8, wherein the determining, for a second region adjacent to the first region in the plurality of regions, second adjustment parameters of a plurality of reference pixel points in the second region comprises:

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 the first pixel point; and

determining the fourth adjustment direction and the fourth adjustment amplitude of each fourth pixel point within a preset range around each second pixel point according to the second adjustment direction and the second adjustment amplitude.

10. The method according to claim 8, wherein the determining, for a second region adjacent to the first region in the plurality of regions, second adjustment parameters of a plurality of reference pixel points in the second region comprises:

determining the second adjustment direction and the second adjustment amplitude of each second pixel point according to the first adjustment direction and the first adjustment amplitude of the first pixel point; and

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

11. The method according to any one of claims 3 to 10, 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 minimum distance between the second pixel point and the first region.

12. The method according to any one of claims 5 to 11, 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.

13. The method according to any one of claims 8 to 12, wherein the fourth adjustment amplitude of the fourth pixel point is smaller than the second adjustment amplitude of the second pixel point, and the fourth adjustment amplitude of the fourth pixel point is negatively correlated with a third reference distance,

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

14. The method according to any one of claims 5 to 13, wherein the determining, for a selected first region in the plurality of regions, first adjustment parameters of a plurality of target pixel points in the first region according to set parameters comprises one of:

determining the third adjustment direction as a coming direction coming close to the first target point in response to the first adjustment direction being the direction coming close to the first target point; and

determining the third adjustment direction as a direction moving away from the first target point in response to the first adjustment direction being the direction moving away from the first target point.

15. The method according to any one of claims 8 to 14, wherein the determining, for a second region adjacent to the first region in the plurality of regions, second adjustment parameters of a plurality of reference pixel points in the second region comprises one of:

determining the second adjustment direction and the fourth adjustment direction as directions close to the second target point in response to the first adjustment direction being the direction coming close to the first target point; and

determining the second adjustment direction and the fourth adjustment direction as directions away from the second target point in response to the first adjustment direction being the direction moving away from the first target point.

16. An image processing apparatus, comprising:

an inspecting module, configured to perform inspection on an image to be processed, and 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 selected first region in the plurality of regions, first adjustment parameters of a plurality of target pixel points in the first 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 a second region adjacent to the first region in the plurality of regions, second adjustment parameters of a plurality of reference pixel points in the second region, wherein the plurality of reference pixel points comprises a second pixel point on the contour line and a fourth pixel point inside the contour line; 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 determine an adjusted image.

17. The apparatus according to claim 16, wherein the second adjustment parameter determining module comprises:

a second adjustment parameter determining sub-module, configured to determine, for the second region adjacent to the first region in the plurality of regions, the second adjustment parameters of a plurality of reference pixel points in the second region according to the first adjustment parameters.

18. The apparatus according to claim 16 or 17, wherein the first adjustment parameters comprise a first adjustment direction and a first adjustment amplitude of the first pixel point, and the second adjustment parameters comprise a second adjustment direction and a second adjustment amplitude of the second pixel point.

19. An electronic device, comprising:

a processor; and

a memory configured to store processor-executable instructions;

wherein the processor is configured to implement the method according to any one of claims 1 to 15.

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 15 is implemented.