CLAIMS

1. An image-based method for determining vehicle damage, wherein the method comprises:

obtaining an auto part image corresponding to an auto part;

checking the auto part image by using a constructed component damage identification model, to determine a damaged area and a damage type of the auto part; and

generating a repair plan for the auto part based on information comprising the damaged area and the damage type of the auto part.

2. The method according to claim 1, wherein the method further comprises:

obtaining information about a repair strategy of the auto part, wherein

correspondingly, the repair plan can further comprise an estimated repair price corresponding to the repair strategy, and the estimated repair price is an estimated repair price of the auto part that is calculated based on the information comprising the damaged area, the damage type, and the repair strategy of the auto part and after price data corresponding to a product and/or a repair service of the auto part in the repair strategy is queried.

3. The method according to claim 1, wherein the component damage identification model comprises:

a deep neural network constructed after sample data training and based on network models comprising a convolutional neural network and a region proposal network.

4. The method according to claim 3, wherein the component damage identification model is configured to:

receive, as input, an auto part image;

detect one or more image regions including damaged areas;

parse the detected image regions;

determine damage types of the image regions; and

generate, as output, one or more damaged areas and damage types corresponding to the image regions.

5. The method according to claim 4, wherein the number of the plurality of image regions is related to the number of damaged areas in the auto part image.

6. The method according to any one of claims 3 to 5, wherein sample data training comprises performing mini-batch gradient descent training using marked data, the marked data comprising images with marked damage regions of corresponding types of damage.

7. The method according to any one of claims 2 to 6, wherein, if it is confirmed that the currently processed auto part image comprises at least two damaged areas, the component damage identification model is configured to:

identify, based on the auto part image, the damaged areas of the auto part and damage types corresponding to the damaged areas; and

select a damaged area corresponding to a damage type that is in the damage types and that indicates a highest damage degree as the damaged area of the auto part, wherein correspondingly, the damage type with the highest damage degree is the determined damage type of the auto part.

8. The method according to claim 7, wherein if at least two auto part images of the auto part are obtained, the checking the auto part image by using a constructed component damage identification model, to determine a damaged area and a damage type of the auto part comprises:

separately checking the auto part images by using the component damage identification model, to determine a damaged area and a damage type of each auto part image; and

performing, based on a predetermined rule, combined selection on the damaged areas and the damage types corresponding to the auto part images, to determine a result of the damaged area and the damage type of the auto part.

9. The method according to claim 8, wherein determining a result of the damaged area and the damage type of the auto part comprises selecting, as output, a damage type and corresponding damaged area of the auto part with the highest damage degree.

10. The method according to claim 1, wherein the obtained auto part image comprises tag

information of a corresponding auto part for the auto part image, the tag information specifying a component of an automobile.

11. The method according to claim 1, further comprising determining that the quality of the obtained auto part image reaches a predetermined processing requirement.

12. The method according to claim 1, wherein damage types comprise mild scratches, severe scratches, mild deformations, moderate deformations, severe deformations, damages, and disassembling-required checks.

13. An apparatus for determining vehicle damage, the apparatus comprising a processor and a memory configured to store an instruction that can be executed by the processor, wherein, when executing the instruction, the processor implements operations according to the method of any one of claims 1 to 12.

14. A computer readable storage medium, wherein the computer readable storage medium stores a computer instruction, and, when the instruction is executed, steps according to the method of any one of claims 1 to 12 are implemented.