CLAIMS

1. A warning method, comprising:

acquiring a first image frame sequence obtained by photographing a game table in a prop operating stage of a game, wherein the game table comprises at least one placement region configured for token placement;

acquiring initial information of a token in each the placement region, wherein the initial information of the token comprises information of a token placed by a gamer participating in the game before the game enters the prop operating stage;

detecting change information of the token in each the placement region in the prop operating stage based on the first image frame sequence and the initial information of the token; and

giving a warning based on the change information of the token in each the placement region,

wherein detecting the change information of the token in each the placement region in the prop operating stage based on the first image frame sequence and the initial information of the token comprises:

acquiring an image parsing result related to a game prop and the token in a message queue, wherein the image parsing result is obtained from at least one of object detection, object identification, or object association relationship detection on the first image frame sequence and is transmitted to the message queue; and

detecting the change information of the token in each the placement region in the prop operating stage based on the image parsing result and the initial information of the token,

wherein detecting the change information of the token in each the placement region in the prop operating stage based on the image parsing result and the initial information of the token comprises:

in a case where the image parsing result indicates that the token is associated with a

human hand, detecting the change information of the token in each the placement region in the prop operating stage based on the image parsing result and the initial information of the token.

2. The method of claim 1, further comprising:

acquiring a second image frame sequence obtained by photographing the game table in a token placement stage of the game; and

performing at least one of following operations:

in a case of detecting, based on the second image frame sequence, that a game controller operates a game prop in a game prop functional region of the game table, determining that the game enters the prop operating stage; and

in a case of detecting, based on the second image frame sequence, that at least one positionally stable game prop exists in the game prop functional region, determining that the game enters the prop operating stage.

3. The method of claim 1 or 2, wherein giving the warning based on the change information of the token in each the placement region comprises:

determining a placement region of which the initial information of the token is changed as an exceptional placement region based on the change information of the token in each the placement region; and

outputting exception warning information, wherein the exception warning information is configured to warn about the change information of the token in the exceptional placement region.

4. The method of claim 3, wherein the exception warning information comprises first warning information and second warning information;

wherein outputting the exception warning information comprises:

outputting the first warning information in a case where the change information of the token in the exceptional placement region indicates an increase in at least one of a total amount of the token or a total value of the token, wherein the first warning information is configured to indicate that a new token is added to the exceptional placement region in the game prop operating stage; and

outputting second warning information in a case where the change information of the token in the exceptional placement region indicates a decrease in at least one of the total amount of the token or the total value of the token, wherein the second warning information is configured to indicate that the token in the exceptional placement region is removed in the game prop operating stage.

5. The method of claim 1, wherein detecting the change information of the token in each the placement region in the prop operating stage based on the image parsing result and the initial information of the token comprises:

determining present information of the token in each the placement region in each image frame in the first image frame sequence based on the image parsing result; and

detecting the change information of the token in each the placement region based on the initial information and the present information of the token in each the placement region.

6. The method of claim 5, wherein the initial information comprises an initial total amount, and the present information comprises a present total amount;

wherein detecting the change information of the token in each the placement region based on the initial information and the present information of the token in each the placement region comprises:

comparing an initial total amount and a present total amount of the token in each the placement region;

determining an increase in the total amount of the token in a first placement region where the initial total amount of the token is less than the present total amount; and

determining a decrease in the total amount of the token in a second placement region where the initial total amount of the token is greater than the present total amount.

7. The method of claim 5, wherein the initial information comprises an initial total value, and the present information comprises a present total value;

wherein detecting the change information of the token in each the placement region based on the initial information and the present information of the token in each the placement region comprises:

comparing an initial total value and a present total value of the token in each the placement region;

determining an increase in a total value of the token in a third placement region where the initial total value of the token is less than the present total value; and

determining a decrease in a total value of the token in a fourth placement region where the initial total value of the token is greater than the present total value.

8. The method of claim 6, wherein the initial information further comprises an initial total value, and the present information further comprises a present total value;

wherein detecting the change information of the token in each the placement region based on the initial information and the present information of the token in each the placement region further comprises:

in a case where the initial total amount and the present total amount of the token in each the placement region are consistent, comparing an initial total value and a present total value of the token in each the placement region;

determining an increase in a total value of the token in a fifth placement region where

the initial total value of the token is less than the present total value of the token; and

determining a decrease in a total value of the token in a sixth placement region where the initial total value of the token is greater than the present total value of the token.

9. The method of claim 3, wherein outputting the exception warning information comprises:

determining a first frame number of frames where the exceptional placement region continuously appears in the first image frame sequence; and

in response to that the first frame number reaches a first threshold, outputting the exception warning information.

10. The method of claim 3 or 9, after outputting the exception warning information, further comprising:

determining an exceptional image frame where information of the token is changed in the first image frame sequence;

acquiring an image parsing result of a candidate frame sequence of which collection time is later than the exceptional image frame in the first image frame sequence;

comparing the present information and the initial information of the token in the exceptional placement region based on the image parsing result of the candidate frame sequence; and

in a case where the present information and the initial information of the token in the exceptional placement region are consistent, outputting warning withdrawal information.

11. The method of claim 10, wherein outputting the warning withdrawal information comprises:

determining a second frame number of frames where the exceptional placement region

continuously appears in the candidate frame sequence; and

in response to that the second frame number reaches a second threshold, outputting the warning withdrawal information, wherein the second threshold is less than the first threshold.

12. A warning apparatus, comprising a first acquisition module, a second acquisition module, a detection module, and a warning module, wherein

the first acquisition module is configured to acquire a first image frame sequence obtained by photographing a game table in a prop operating stage of a game, wherein the game table comprises at least one placement region configured for token placement;

the second acquisition module is configured to acquire initial information of a token in each the placement region, wherein the initial information of the token comprises information of a token placed by a gamer participating in the game before the game enters the prop operating stage;

the detection module is configured to detect change information of the token in each the placement region in the prop operating stage based on the first image frame sequence and the initial information of the token; and

the warning module is configured to give a warning based on the change information of the token in each the placement region,

wherein the detection module comprises:

a first acquisition submodule, congiured to acquire an image parsing result related to a game prop and the token in a message queue, wherein the image parsing result is obtained from at least one of object detection, object identification, or object association relationship detection on the first image frame sequence and is transmitted to the message queue; and

a detection submodule, configured to detect the change information of the token in each the placement region in the prop operating stage based on the image parsing result and the initial information of the token,

wherein the detection submodule is configured to:

in a case where the image parsing result indicates that the token is associated with a human hand, detect the change information of the token in each the placement region in the prop operating stage based on the image parsing result and the initial information of the token.

13. A warning device, comprising a memory and a processor, wherein the memory stores a computer program capable of running in the processor, and the processor, when executing the program, is configured to:

acquire a first image frame sequence obtained by photographing a game table in a prop operating stage of a game, wherein the game table comprises at least one placement region configured for token placement;

acquire initial information of a token in each the placement region, wherein the initial information of the token comprises information of a token placed by a gamer participating in the game before the game enters the prop operating stage;

detect change information of the token in each the placement region in the prop operating stage based on the first image frame sequence and the initial information of the token; and

give a warning based on the change information of the token in each the placement region,

wherein the processor is specifically configured to:

acquire an image parsing result related to a game prop and the token in a message queue, wherein the image parsing result is obtained from at least one of object detection, object identification, or object association relationship detection on the first image frame sequence and is transmitted to the message queue; and

detect the change information of the token in each the placement region in the prop operating stage based on the image parsing result and the initial information of the token,

wherein the processor is further specifically configured to:

in a case where the image parsing result indicates that the token is associated with a

human hand, detect the change information of the token in each the placement region in the prop operating stage based on the image parsing result and the initial information of the token.

14. The warning device of claim 13, wherein the processor is further configured to:

acquire a second image frame sequence obtained by photographing the game table in a token placement stage of the game; and

perform at least one of following operations:

in a case of detecting, based on the second image frame sequence, that a game controller operates a game prop in a game prop functional region of the game table, determining that the game enters the prop operating stage; and

in a case of detecting, based on the second image frame sequence, that at least one positionally stable game prop exists in the game prop functional region, determining that the game enters the prop operating stage.

15. The warning device of claim 13 or 14, wherein the processor is configured to:

determine a placement region of which the initial information of the token is changed as an exceptional placement region based on the change information of the token in each the placement region; and

output exception warning information, wherien the exception warning information is configured to warn about the change information of the token in the exceptional placement region.

16. The warning device of claim 15, wherein the exception warning information comprises first warning information and second warning information;

wherein the processor is configured to:

outputting the first warning information in a case where the change information of the token in the exceptional placement region indicates an increase in at least one of a total amount of the token or a total value of the token, wherein the first warning information is configured to indicate that a new token is added to the exceptional placement region in the game prop operating stage; and

outputting second warning information in a case where the change information of the token in the exceptional placement region indicates a decrease in at least one of the total amount of the token or the total value of the token, wherein the second warning information is configured to indicate that the token in the exceptional placement region is removed in the game prop operating stage.

17. A computer-readable storage medium, storing a computer program, wherein the computer program implements steps in the method of any one of claims 1 to 11 when executed by the processor.

18. A computer program, stored in a memory; wherein the computer program, when executed by a processor, implements steps in the method of any one of claims 1 to 11.