CLAIMS

1. A method for data processing, comprising:

acquiring recognition data obtained by performing game object recognition on each frame of game image in a game image frame sequence acquired during a game comprising a plurality of game stages, each game stage corresponding to at least one respective game state detection module, each game state detection module being configured to detect a respective game region on a surface of a game table, wherein the recognition data comprises type data of a game object and position data of the game object on the game table;

acquiring heat zone maps corresponding to the surface of the game table, wherein each of the heat zone maps represents a respective game region on the surface of the game table to be detected by a respective game state detection module, and among the heat zone maps corresponding to the surface of the game table, a first heat zone map corresponding to a first game state detection module corresponding to a first game stage contains at least one zone different from a second heat zone map corresponding to a second game state detection module corresponding to a second game stage, and the first game stage is different from the second game stage; and

filtering out, based on the type data, the position data, and the heat zone maps, recognition data of a game object that is located in a corresponding game region in each frame of game image in the game image frame sequence.

2. The method of claim 1, wherein acquiring the heat zone maps corresponding to the surface of the game table comprises:

determining game state detection modules based on a type of the game table; and

loading the heat zone maps for the game state detection modules by reading a configuration file corresponding to the game table.

3. The method of claim 2, wherein the filtering out, based on the type data, the position data, and the heat zone maps, recognition data of a game object that is located in a corresponding game region in each frame of game image in the game image frame sequence comprises:

determining at least one type of target object detected by the game state detection modules;

screening out, from the recognition data of each frame of game image in the game image frame sequence, recognition data of the at least one type of target object; and

filtering out recognition data of a target object that is located in a corresponding game region in each frame of game image in the game image frame sequence based on position data in the screened out recognition data of each of the at least one type of target object and a game region corresponding to each of the at least one type of target object in a corresponding heat zone map.

4. The method of claim 3, wherein the type data comprises a type identifier, and the determining the at least one type of target object detected by the game state detection modules comprises:

determining a type identifier set of the at least one type of target object detected by the game state detection modules; and

screening out, from the recognition data of each frame of game image in the game image frame sequence, the recognition data of the at least one type of target object comprises:

screening out recognition data of each of the at least one type of target object based on the type identifier set.

5. The method of any one of claims 1-4, wherein the filtering out, based on the type data, the position data, and the heat zone maps, recognition data of a game object that is located in a corresponding game region in each frame of game image in the game image frame sequence comprises:

determining at least one type of target object detected by the game state detection modules;

for each of the heat zone maps, acquiring a default color value of each game region in the heat zone map, wherein each game region in the heat zone map has a respective different default color value;

determining a target object in each frame of game image based on the type data;

determining, for each target object in each frame of game image, a color value in a corresponding heat zone map based on the position data; and

comparing the color value of each target object in the corresponding heat zone map to the default color value of each game region in the corresponding heat zone map to screen out the recognition data of the target object that is located in the corresponding game region.

6. The method of claim 5, wherein the position data comprises center coordinates, and the method further comprises:

for each target object, responsive to that the target object is located in a region covered by a corresponding heat zone map, determining a target game region of the target object in the corresponding heat zone map, and

associating a default color value of the target game region with a hot zone mapping attribute of the target object, wherein the hot zone mapping attribute is configured for a game state detection module corresponding to the corresponding heat zone map to perform logic analysis.

7. The method of any one of claims 3-6, further comprising:

for each of the heat zone maps, determining recognition data of a target object in the heat zone map as an associated information set of the heat zone map;

encapsulating associated information sets of the heat zone maps corresponding to the

surface of the game table to obtain a message body corresponding to each frame of game image; and

transmitting, through a message queue, the message body corresponding to each frame of game image to the game state detection modules for logic analysis, wherein each of the game state detection modules reads the message body from the message queue based on a subscribed subject, and extracts the associated information set of a corresponding heat zone map for corresponding service logic judgment.

8. The method of any one of claims 1-7, wherein the acquiring the recognition data obtained by performing game object recognition on each frame of game image in the game image frame sequence comprises:

acquiring, through a message queue, the recognition data obtained by performing game object recognition on each frame of game image in the image frame sequence, wherein the recognition data is obtained by performing detection and recognition on each frame of game image and is input to the message queue.

9. The method of claim 7 or 8, further comprising:

clearing data stored in a cache layer before start of a round of game; and

responsive to that the game table enters a specific stage, storing, to the cache layer, an encapsulated message body corresponding to each frame of game image in the specific stage.

10. The method of any one of claims 3-9, wherein the at least one type of target object comprises at least one of: a poker, game currency, cash, a hand, or a marker; and the recognition data of the target object comprises at least one of:

position data, suit, and points of the poker,

position data, amount, nominal value, and associated operator identity of the game

currency,

position data, amount, nominal value, and associated operator identity of the cash,

position data and associated operator identity of the hand, or

position data and indication content of the marker.

11. A game table based apparatus for data processing, comprising a first acquisition module, a second acquisition module, and a filtering module, wherein

the first acquisition module is configured to acquire recognition data obtained by performing game object recognition on each frame of game image in a game image frame sequence acquired during a game comprising a plurality of game stages, each game stage corresponding to at least one respective game state detection module, each game state detection module being configured to detect a respective game region on a surface of a game table, wherein the recognition data comprises type data of a game object and position data of the game object on the game table;

the second acquisition module is configured to acquire heat zone maps corresponding to the surface of the game table, wherein each of the heat zone maps represents a respective game region on the surface of the game table to be detected by a respective game state detection module, and among the heat zone maps corresponding to the surface of the game table, a first heat zone map corresponding to a first game state detection module corresponding to a first game stage contains at least one zone different from a second heat zone map corresponding to a second game state detection module corresponding to a second game stage, and the first game stage is different from the second game stage; and

the filtering module is configured to filter out, based on the type data, the position data, and the heat zone maps, recognition data of a game object that is located in a corresponding game region in each frame of game image in the game image frame sequence.

12. The apparatus of claim 11, wherein the first acquisition module comprises a first determination submodule and a loading submodule, wherein

the first determination submodule is configured to determine game state detection modules based on a type of the game table; and

the loading submodule is configured to load the heat zone maps for the game state detection modules by reading a configuration file corresponding to the game table.

13. The apparatus of claim 12, wherein the filtering module comprises a second determination submodule, a classification submodule, and a filtering submodule, wherein

the second determination submodule is configured to determine at least one type of target object detected by the game state detection modules;

the classification submodule is configured to screen out, from the recognition data of each frame of game image in the game image frame sequence, recognition data of the at least one type of target object; and

the filtering submodule is configured to filter out recognition data of a target object that is located in a corresponding game region in each frame of game image in the game image frame sequence based on position data in the screened out recognition data of each of the at least one type of target object and a game region corresponding to each of the at least one type of target object in a corresponding heat zone map.

14. The apparatus of claim 13, wherein the type data comprises a type identifier;

the determination submodule is further configured to determine a type identifier set of the at least one type of target object detected by the game state detection modules; and

the classification submodule is further configured to screen out recognition data of each of the at least one type of target object based on the type identifier set.

15. The apparatus of any one of claims 11-14, wherein the filtering module comprises a second determination submodule, an acquisition submodule, a third determination submodule,

a fourth determination submodule, and a screening submodule, wherein

the second determination submodule is configured to determine at least one type of target object detected by the game state detection modules;

the acquisition submodule is configured to: for each of the heat zone maps, acquire a default color value of each game region in the heat zone map, wherein each game region in the heat zone map has a respective different default color value;

the third determination submodule is configured to determine a target object in each frame of game image based on the type data;

the fourth determination submodule is configured to determine, for each target object in each frame of game image, a color value in a corresponding heat zone map based on the position data; and

the screening submodule is configured to compare the color value of each target object in the corresponding heat zone map to the default color value of each game region in the corresponding heat zone map to screen out the recognition data of the target object that is located in the corresponding game region.

16. The apparatus of claim 15, wherein the position data comprises center coordinates, and the filtering module further comprises a third determination submodule and an association submodule, wherein

the third determination submodule is configured to: for each target object, responsive to that the target object is located in a region covered by a corresponding heat zone map, determine a target game region of the target object in the corresponding heat zone map, and

the association submodule is configured to associate a default color value of the target game region with a hot zone mapping attribute of the target object, wherein the hot zone mapping attribute is configured for a game state detection module corresponding to the corresponding heat zone map to perform logic analysis.

17. An electronic device, comprising a memory and a processor, wherein the memory stores a computer program capable of running in the processor, and the processor executes the program to implement the steps in the method of any one of claims 1-10.

18. A computer-readable storage medium having stored thereon a computer program that, when being executed by a processor, implements the steps in the method of any one of claims 1-10.