WINE PRODUCT INFORMATION MANAGEMENT METHOD AND APPARATUS, COMPUTER DEVICE, AND STORAGE MEDIUM

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is based on and claims priority to Chinese Patent Application No. 202010213591.6 filed on March 24, 2020, which is incorporated in this application by reference in its entirety.

TECHNICAL FIELD

This application relates to the field of computer technologies, and in particular, to a wine product information management method and apparatus, a computer device, and a storage medium.

BACKGROUND

In the existing technology, a common wine cellar generally only has functions of storing wine products and keeping a constant temperature and constant humidity, and cannot provide a user with wine product information and position information of stored wines. Whenever the user wants to know the stored wines, the user generally needs to open the wine cellar for manual search, and check the stored wines one by one to know types and wine product information of the stored wines. When the user wants to track or take inventory of the stored wines, the user needs to take time and effort to register and record the wines one by one.

SUMMARY

In view of this, embodiments of this application provide a wine product information management method and apparatus, a computer device, and a storage medium, which can realize automatic recording of wine product information, so that a user does not need to perform any additional procedures when a wine product is stored in a warehouse or taken out of the warehouse, which can greatly save the time of storing the wine product in the warehouse and taking the wine product out of the warehouse and improve efficiency of storing the wine product in the warehouse and taking the wine product out of the warehouse.

In one aspect, an embodiment of this application provides a wine product information management method, the method including:

acquiring feature information of a target wine product through a camera;

uploading the feature information to a cloud server, and matching the feature information with wine product information in the cloud server; and

recording the target wine product in the cloud server if target wine product information corresponding to the feature information exists in the cloud server, and sending a recorded result to a user terminal.

In another aspect, an embodiment of this application provides a wine product information management apparatus, the apparatus including:

a first acquisition unit configured to acquire feature information of a target wine product through a camera;

an uploading and matching unit configured to upload the feature information to a cloud server, and match the feature information with wine product information in the cloud server; and

a first recording and sending unit configured to record the target wine product in the cloud server if target wine product information corresponding to the feature information exists in the cloud server, and send a recorded result to a user terminal.

In yet another aspect, an embodiment of this application further provides a computer device, including a memory, a processor, and a computer program stored on the memory and capable of running on the processor, where the processor, when executing the computer program, implements the wine product information management method as described above.

In still another aspect, an embodiment of this application further provides a computer-readable storage medium, where the computer-readable storage medium stores one or more computer programs, the one or more computer programs being executable by one or more processors to implement the wine product information management method as described above.

Embodiments of this application provide a wine product information management method and apparatus, a computer device, and a storage medium. The method includes: acquiring feature information of a target wine product through a camera; uploading the feature information to a cloud server, and matching the feature information with wine product information in the cloud server; and recording the target wine product in the cloud server if target wine product information corresponding to the feature information exists in the cloud server, and sending a recorded result to a user terminal. According to this application, automatic recording of wine product information can be realized, so that a user does not need to perform any additional procedures when a wine product is stored in a warehouse or taken out of the warehouse, which can greatly save the time of storing the wine product in the warehouse and taking the wine product out of the warehouse and improve efficiency of storing the wine product in the warehouse and taking the wine product out of the warehouse.

BRIEF DESCRIPTION OF THE DRAWINGS

To describe the technical solutions of the embodiments of this application more clearly, the following briefly introduces the accompanying drawings required for describing the embodiments. Apparently, the accompanying drawings in the following description show only some embodiments of this application, and a person of ordinary skill in the art may still derive other drawings from these accompanying drawings without creative efforts.

FIG. 1 is a schematic diagram of an application scenario of a wine product information management method according to an embodiment of this application;

FIG. 2 is a schematic flowchart of a wine product information management method according to an embodiment of this application;

FIG. 3 is another schematic flowchart of a wine product information management method according to an embodiment of this application;

FIG. 4 is another schematic flowchart of a wine product information management method according to an embodiment of this application;

FIG. 5 is another schematic flowchart of a wine product information management method according to an embodiment of this application;

FIG. 6 is another schematic flowchart of a wine product information management method according to an embodiment of this application;

FIG. 7 is a schematic block diagram of a wine product information management apparatus according to an embodiment of this application;

FIG. 8 is another schematic block diagram of a wine product information management apparatus according to an embodiment of this application;

FIG. 9 is another schematic block diagram of a wine product information management apparatus according to an embodiment of this application;

FIG. 10 is another schematic block diagram of a wine product information management apparatus according to an embodiment of this application;

FIG. 11 is another schematic block diagram of a wine product information management apparatus according to an embodiment of this application; and

FIG. 12 is a schematic diagram of structural composition of a computer device according to an embodiment of this application.

DETAILED DESCRIPTION

The technical solutions in embodiments of this application are clearly and completely described in the following with reference to the accompanying drawings in the embodiments of this application. Apparently, the described embodiments are merely some rather than all of the embodiments of this application. All other embodiments obtained by a person of ordinary skill in the art based on the embodiments in this application without creative efforts shall fall

within the protection scope of this application.

It should be understood that the terms "include" and "comprise", when used in the specification and the appended claims, specify the presence of described features, entireties, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, entireties, steps, operations, elements, components, and/or combinations thereof.

It should be further understood that herein the terms used in the specification of this application are intended only to describe particular embodiments but not to limit this application. As used in the specification and appended claims of this application, the singular forms "a/an", "one", and "the" are intended to include the plural forms, unless expressly stated in the context otherwise.

It should be further understood that the term "and/or" used in the specification and appended claims of this application indicate associating with any combination and all possible combinations of one or more listed items, and including all the combinations.

Referring to FIG. 1 and FIG. 2, FIG. 1 is a schematic diagram of an application scenario of a wine product information management method according to an embodiment of this application, and FIG. 2 is a schematic flowchart of a wine product information management method according to an embodiment of this application. The wine product information management method is applied to a smart wine cabinet. As an application, as shown in FIG. 1, the wine product information management method is applied to a smart wine cabinet 10. The smart wine cabinet 10 sends, through the Internet, feature information acquired by a camera in the smart wine cabinet to a cloud server 20. The cloud server 20 then sends a recorded result to a user terminal 30.

Referring to FIG. 2, FIG. 2 is a schematic flowchart of a wine product information management method according to an embodiment of this application. As shown in FIG. 2, the method includes step S101 to step S103 below:

S101: Acquire feature information of a target wine product through a camera.

In the embodiments of this application, the wine product information management method is mainly applied to the smart wine cabinet, and the camera is disposed in the smart wine cabinet to shoot images or video and other visual information of wine products in the smart wine cabinet. Specifically, the camera may be a fixed camera disposed inside the smart wine cabinet or a fixed camera disposed outside the smart wine cabinet, and in some embodiments, may be a handheld camera, a head-mounted camera, or glasses capable of photographing. In practical applications, the camera is generally provided with a smart phone. In this embodiment, video information or image information may be captured by the camera in the smart wine cabinet. For the captured video information or image information, the feature information of the target wine product in the video information or image information is identified

and acquired by using an artificial intelligence dynamic image recognition algorithm or an optical character recognition (OCR) algorithm respectively. The target wine product refers to a wine product selected by a user in the smart wine cabinet. The target wine product may include one or more wine products. The type of the target wine product is not limited herein.

In an embodiment, as shown in FIG. 3, step S101 includes step S201 to step S203 below:

S201: Acquire video information of the wine product through the camera.

In the embodiments of this application, video of the wine product in the smart wine cabinet is shot through the camera to obtain the video information, and then the target wine product in the video information is recognized by using the artificial intelligence dynamic image recognition algorithm, so as to obtain the feature information of the target wine product in the video information.

S202: Identify basic information of the wine product from the video information by using an artificial intelligence dynamic image recognition algorithm, the basic information including a brand, a model, and year of manufacturing of the wine product.

In the embodiments of this application, the basic information is the feature information of the target wine product. In this embodiment, the basic information includes the brand, the model, and the year of manufacturing of the wine product, and the artificial intelligence dynamic image recognition algorithm specifically includes the following steps: After the video information of the wine product is acquired through the camera, a surface of a bottle of the wine product in the video information is captured, calculated, and analyzed by using a core algorithm. In a single training sample identification method based on a local feature region, the first step is to define a local region of the wine product in the video information. The second step is to extract features for the local region of the wine product, and map an image vector of the wine product captured to a feature vector of the wine product according to a transformation matrix obtained after sample training. The third step is to select local features for the feature vector of the wine product. Finally, classification is performed. Classifiers mostly take the form of combined classifiers, each local feature corresponds to a classifier, and then the basic information of the wine product may be identified by voting or linear weighting. The artificial intelligence dynamic image recognition algorithm used in this embodiment is an existing recognition algorithm. The specific recognition algorithm is not specifically elaborated herein.

S203: Use the basic information of the wine product as the feature information of the wine product.

In another embodiment, as shown in FIG. 4, step S101 further includes step S301 to step S303 below:

S301: Acquire picture information of the wine product through the camera.

In the embodiments of this application, a picture of the wine product in the smart wine cabinet is shot through the camera to obtain the picture information, and then the target wine

product in the picture information is identified by using the OCR algorithm, so as to obtain the feature information of the target wine product in the picture information.

S302: Identify text information on the wine product from the picture information by using an OCR algorithm, the text information including a brand, a product name, and date of manufacturing of the wine product.

In the embodiments of this application, the text information is the feature information of the target wine product. In this embodiment, the text information includes the brand, the product name, and the date of manufacturing of the wine product, and the OCR algorithm specifically includes the following steps: Denoising, binarization, tilt correction, and other preprocessing are performed on the picture information, then characters in the picture information are cut, main features of the characters are extracted and compared with character samples in a character library for identification, and text on a wine label of the wine product is identified. The text includes the brand, the product name, and the date of manufacturing of the wine product. Then, the identified text is corrected, misidentified text is removed, some easily confused letters are replaced with possible similar candidate characters, and the most logical word is selected. The OCR algorithm used in this embodiment is an existing recognition algorithm. The specific recognition algorithm is not specifically elaborated herein.

S303: Use the text information of the wine product as the feature information of the wine product.

S102: Upload the feature information to a cloud server, and match the feature information with wine product information in the cloud server.

In the embodiments of this application, the smart wine cabinet in this embodiment is connected with the cloud server through the Internet, and the cloud server may be an independent cloud server or a cloud server cluster formed by a plurality of cloud servers. A timer is also provided in this embodiment for the process of uploading, by the smart wine cabinet, the feature information to the cloud server. The feature information in the smart wine cabinet may be uploaded to the cloud server within a specified time interval set through the timer. The timer may be a repeated timer or a one-time timer. The specific type of the timer is selected according to a requirement of a user and is not limited herein. The set time interval of the timer may be 10 seconds or other time. The specific time interval is not limited herein.

It is to be noted that sample wine product information is pre-collected and stored in the cloud server. The sample wine product information is configured for comparison with the feature information uploaded to the smart wine cabinet after the feature information is received, so as to determine whether target wine information matching the uploaded feature information exists in the cloud server.

In an embodiment, as shown in FIG. 5, step S102 includes step S401 to step S402 below:

S401: Upload the feature information to the cloud server, and match the feature

information with the wine product information in the cloud server.

S402: The target wine product information corresponding to the feature information exists in the cloud server if at least two types of target wine product information matching the feature information exist in the wine product information in the cloud server.

In the embodiments of this application, the target wine product information corresponding to the feature information exists in the cloud server if the at least two types of target wine product information matching the feature information exist in the wine product information in the cloud server. For example, if the feature information includes the brand, the model, and the year of manufacturing of the wine product, the target wine product information corresponding to the feature information exists in the cloud server when the wine product information in the cloud server includes a wine label of the wine product and a wine bottle shape, or a wine bottle shape and a bottle cap of the wine product, or a wine label of the wine product and a bottle cap of the wine product, that is, one of the target wine product information matches the feature information. If the feature information includes the brand, the product name, and the date of manufacturing of the wine product, the target wine product information corresponding to the feature information exists in the cloud server when the wine product information in the cloud server includes the brand of the wine product and the product name of the wine product, or the brand of the wine product and the date of manufacturing of the wine product, or the product name and the date of manufacturing, that is, one of the target wine product information matches the feature information.

S103: Record the target wine product in the cloud server if target wine product information corresponding to the feature information exists in the cloud server, and send a recorded result to a user terminal.

In the embodiments of this application, the target wine product is recorded in the cloud server if the target wine product information corresponding to the feature information exists in the cloud server. Specifically, the cloud server may record detailed information of the target wine product (e.g., the feature information of the target wine product and the time to send the feature information). Finally, the recorded result is sent to the user terminal. Specifically, the wine label of the wine product, the wine bottle shape, the bottle cap of the wine product, the product name, and the date of manufacturing are recorded in the cloud server. All feature information of the target wine product may be comprehensively considered in the cloud server, the feature information of the wine product is repeatedly verified to ensure that the feature information of the wine product is correct, and finally the correct feature information of the wine product is sent to the user terminal.

In an embodiment, as shown in FIG. 6, the wine product information management method further includes a wine product positioning step. The wine product positioning step specifically includes step S501 to step S503 below:

S501: Constantly acquire infrared signals in a wine position region by using an infrared sensor according to a preset frequency.

S502: Compare an up-to-date infrared signal with a previous infrared signal.

S503: Determine that the wine position region has been occupied by a wine product if it is determined according to a comparison result that the infrared signal has changed, record position information and time information of the wine position region, and send the position information and the time information to the cloud server.

In the embodiments of this application, independent infrared sensors are provided at wine storage positions in the smart wine cabinet. In other embodiments, other independent inductive sensors, such as microwave, ultrasonic or weight inductive sensors, may also be provided in the smart wine cabinet. It is sensed, by using such sensors, whether the corresponding wine storage positions are occupied by wine products. In this embodiment, if independent infrared sensors are provided at the wine storage positions in the smart wine cabinet, within a range of a wine position, when an infrared signal received by an infrared transmitter changes as follows, it may be determined that the wine storage position is occupied by the wine product: an infrared signal emitted by the infrared transmitter at the wine storage position may be attenuated by an infrared signal reflected back after encountering the bottom of a wine product bottle, resulting in a change in the infrared signal. The changed infrared signal is compared with the previous infrared signal, and it is further determined according to a comparison result whether the infrared signal at the wine storage position changes. If yes, it may be determined that the wine storage position is occupied by the wine product. Finally, position information and time information of the wine position region are recorded and sent to the cloud server.

In some embodiments, in this embodiment, whether the user is storing a wine product in a warehouse or taking the wine product out of the warehouse may also be distinguished through the artificial intelligence dynamic image recognition algorithm, and positions where the wine product is stored in the warehouse or taken out of the warehouse can be roughly speculated at the same time. First, a face in the video is detected, and basic attributes of the user, such as gender and age, are identified. Then, the face is tracked, and the user's current behavior, that is, take the wine product out of the warehouse or store the wine product in the warehouse, is determined according to a recorded face movement trajectory. Through information comparison between a plurality of cameras, positioning information of the user operating the wine product may be determined, information indicating that the wine product is taken out of/stored in the warehouse and the positioning information of the wine product are sent to the cloud server, and then the cloud server transmits such information to the user terminal.

As can be seen from the above, in the embodiments of this application, the feature

information of the target wine product is acquired through the camera. The feature information is uploaded to the cloud server, and is matched with the wine product information in the cloud server. The target wine product is recorded in the cloud server if target wine product information corresponding to the feature information exists in the cloud server, and the recorded result is sent to the user terminal. According to this application, automatic recording of wine product information can be realized, so that a user does not need to perform any additional procedures when a wine product is stored in a warehouse or taken out of the warehouse, which can greatly save the time of storing the wine product in the warehouse and taking the wine product out of the warehouse and improve efficiency of storing the wine product in the warehouse and taking the wine product out of the warehouse.

Referring to FIG. 7, corresponding to the foregoing wine product information management method, an embodiment of this application further provides a wine product information management apparatus. The apparatus 100 includes: a first acquisition unit 101, an uploading and matching unit 102, and a first recording and sending unit 103.

The first acquisition unit 101 is configured to acquire feature information of a target wine product through a camera.

The uploading and matching unit 102 is configured to upload the feature information to a cloud server, and match the feature information with wine product information in the cloud server.

The first recording and sending unit 103 is configured to record the target wine product in the cloud server if target wine product information corresponding to the feature information exists in the cloud server, and send a recorded result to a user terminal.

Referring to FIG. 8, the first acquisition unit 101 includes:

a first acquisition subunit 101a configured to acquire video information of the wine product through the camera;

a first identification unit 101b configured to identify basic information of the wine product from the video information by using an artificial intelligence dynamic image recognition algorithm, the basic information including a brand, a model, and year of manufacturing of the wine product; and

a first execution unit 101c configured to use the basic information of the wine product as the feature information of the wine product.

Referring to FIG. 9, the first acquisition unit 101 further includes:

a second acquisition subunit 101d configured to acquire picture information of the wine product through the camera;

a second identification unit 101e configured to identify text information on the wine product from the picture information by using an OCR algorithm, the text information including a brand, a product name, and date of manufacturing of the wine product; and

a second execution unit 101f configured to use the text information of the wine product as the feature information of the wine product.

Referring to FIG. 10, the uploading and matching unit 102 includes:

an uploading and matching subunit 102a configured to upload the feature information to a cloud server, and match the feature information with wine product information in the cloud server; and

a determination unit 102b configured to determine that the target wine product information corresponding to the feature information exists in the cloud server if at least two types of target wine product information matching the feature information exist in the wine product information in the cloud server.

Referring to FIG. 11, the wine product information management apparatus 100 further includes a wine product positioning unit 104 configured to constantly acquire infrared signals in a wine position region by using an infrared sensor according to a preset frequency; compare an up-to-date infrared signal with a previous infrared signal; and determine that the wine position region has been occupied by a wine product if it is determined according to a comparison result that the infrared signal has changed, record position information and time information of the wine position region, and send the position information and the time information to the cloud server.

As can be seen from the above, in the embodiments of this application, the feature information of the target wine product is acquired through the camera. The feature information is uploaded to the cloud server, and matched with the wine product information in the cloud server. The target wine product is recorded in the cloud server if target wine product information corresponding to the feature information exists in the cloud server, and the recorded result is sent to the user terminal. According to this application, automatic recording of wine product information can be realized, so that a user does not need to perform any additional procedures when a wine product is stored in a warehouse or taken out of the warehouse, which can greatly save the time of storing the wine product in the warehouse and taking the wine product out of the warehouse and improve efficiency of storing the wine product in the warehouse and taking the wine product out of the warehouse.

The foregoing wine product information management apparatus is in one-to-one correspondence to the foregoing wine product information management method. A specific principle and process thereof are the same as those of the method in the foregoing embodiments, and details are not described again.

The foregoing wine product information management apparatus may be implemented as a form of a computer program. The computer program may run on a computer device as shown in FIG. 12.

FIG. 12 is a schematic diagram of structural composition of a computer device according

to this application. The device may be a smart wine cabinet. Referring to FIG. 12, the computer device 500 includes a processor 502, a nonvolatile storage medium 503, an internal memory 504, and a network interface 505 connected through a system bus 501. The nonvolatile storage medium 503 of the computer device 500 may store an operating system 5031 and a computer program 5032. The computer program 5032, when executed, may cause the processor 502 to perform a wine product information management method. The processor 502 of the computer device 500 is configured to provide computing and control capabilities to support running of the entire computer device 500. The internal memory 504 provides an environment for running of the computer program 5032 in the nonvolatile storage medium 503. The computer program, when executed by the processor, may cause the processor 502 to perform a wine product information management method. The network interface 505 of the computer device 500 is configured for network communication. A person skilled in the art may understand that FIG. 12 is only a block diagram of a partial structure related to a solution in this application, and does not constitute any limitation on the computer device to which the solution in this application is applied. Specifically, the computer device may include more components or fewer components than those shown in the figure, or some components may be combined, or a different component deployment may be used.

The processor 502, when executing the computer program, implements the following operations:

acquiring feature information of a target wine product through a camera;

uploading the feature information to a cloud server, and matching the feature information with wine product information in the cloud server; and

recording the target wine product in the cloud server if target wine product information corresponding to the feature information exists in the cloud server, and sending a recorded result to a user terminal.

In an embodiment, the acquiring feature information of a target wine product through a camera includes:

acquiring video information of the target wine product through the camera;

identifying basic information of the wine product from the video information by using an artificial intelligence dynamic image recognition algorithm, the basic information including a brand, a model, and year of manufacturing of the wine product; and

using the basic information of the wine product as the feature information of the wine product.

In an embodiment, the acquiring feature information of a target wine product through a camera includes:

acquiring picture information of the target wine product through the camera;

identifying text information on the wine product from the picture information by using an

OCR algorithm, the text information including a brand, a product name, and date of manufacturing of the wine product; and

using the text information of the wine product as the feature information of the wine product.

In an embodiment, the uploading the feature information to a cloud server, and matching the feature information with wine product information in the cloud server includes:

uploading the feature information to the cloud server, and matching the feature information with the wine product information in the cloud server; and

the target wine product information corresponding to the feature information existing in the cloud server if at least two types of target wine product information matching the feature information exist in the wine product information in the cloud server.

The processor 502, when executing the computer program, further implements the following operations:

constantly acquiring infrared signals in a wine position region by using an infrared sensor according to a preset frequency;

comparing an up-to-date infrared signal with a previous infrared signal; and

determining that the wine position region has been occupied by a wine product if it is determined according to a comparison result that the infrared signal has changed,

recording position information and time information of the wine position region, and sending the position information and the time information to the cloud server.

A person skilled in the art may understand that the embodiment of the computer device shown in FIG. 12 does not constitute any limitation on specific composition of the computer device. In other embodiments, the computer device may include more components or fewer components than those shown in the figure, or some components may be combined, or a different component deployment may be used. For example, in some embodiments, the computer device includes only a memory and a processor. In such embodiments, structures and functions of the memory and the processor are consistent with those in the embodiment shown in FIG. 12. Details are not described herein again.

This application further provides a computer-readable storage medium. The computer-readable storage medium stores one or more computer programs. The one or more computer programs may be executable by one or more processors to implement the following steps:

acquiring feature information of a target wine product through a camera;

uploading the feature information to a cloud server, and matching the feature information with wine product information in the cloud server; and

recording the target wine product in the cloud server if target wine product information corresponding to the feature information exists in the cloud server, and sending a recorded result to a user terminal.

In an embodiment, the acquiring feature information of a target wine product through a camera includes:

acquiring video information of the target wine product through the camera;

identifying basic information of the wine product from the video information by using an artificial intelligence dynamic image recognition algorithm, the basic information including a brand, a model, and year of manufacturing of the wine product; and

using the basic information of the wine product as the feature information of the wine product.

In an embodiment, the acquiring feature information of a target wine product through a camera includes:

acquiring picture information of the target wine product through the camera;

identifying text information on the wine product from the picture information by using an OCR algorithm, the text information including a brand, a product name, and date of manufacturing of the wine product; and

using the text information of the wine product as the feature information of the wine product.

In an embodiment, the uploading the feature information to a cloud server, and matching the feature information with wine product information in the cloud server includes:

uploading the feature information to the cloud server, and matching the feature information with the wine product information in the cloud server; and

the target wine product information corresponding to the feature information existing in the cloud server if at least two types of target wine product information matching the feature information exist in the wine product information in the cloud server.

In an embodiment, the one or more computer programs may be executable by one or more processors to further implement the following steps:

constantly acquiring infrared signals in a wine position region by using an infrared sensor according to a preset frequency;

comparing an up-to-date infrared signal with a previous infrared signal; and

determining that the wine position region has been occupied by a wine product if it is determined according to a comparison result that the infrared signal has changed, recording position information and time information of the wine position region, and sending the position information and the time information to the cloud server.

The foregoing storage medium in this application includes: various media that may store program code such as a magnetic disk, an optical disc, and a read-only memory (ROM).

Units in all embodiments of this application may be implemented using a universal integrated circuit, for example, a central processing unit (CPU) or an application specific integrated circuit (ASIC).

The steps in the wine product information management method according to the embodiments of this application may be sequentially adjusted, merged, and deleted according to actual requirements.

The units in the wine product information management apparatus according to the embodiments of this application may be sequentially adjusted, merged, and deleted according to actual requirements.

The foregoing descriptions are merely specific implementations of this application, but the protection scope of this application is not limited thereto. Any equivalent modification or replacement can be readily figured out by a person skilled in the art within the technical scope disclosed in this application, all of which shall fall within the protection scope of this application. Therefore, the protection scope of this application shall be subject to the protection scope of the claims.

CLAIMS

What is claimed is:

1. A wine product information management method, wherein the method comprises:

acquiring feature information of a target wine product through a camera;

uploading the feature information to a cloud server, and matching the feature information with wine product information in the cloud server; and

recording the target wine product in the cloud server if target wine product information corresponding to the feature information exists in the cloud server, and sending a recorded result to a user terminal.

2. The method according to claim 1, wherein the acquiring feature information of a target wine product through a camera comprises:

acquiring video information of the target wine product through the camera;

identifying basic information of the wine product from the video information by using an artificial intelligence dynamic image recognition algorithm, the basic information comprising a brand, a model, and year of manufacturing of the wine product; and

using the basic information of the wine product as the feature information of the wine product.

3. The method according to claim 1, wherein the acquiring feature information of a target wine product through a camera comprises:

acquiring picture information of the target wine product through the camera;

identifying text information on the wine product from the picture information by using an OCR algorithm, the text information comprising a brand, a product name, and date of manufacturing of the wine product; and

using the text information of the wine product as the feature information of the wine product.

4. The method according to any one of claims 1 to 3, wherein the uploading the feature information to a cloud server, and matching the feature information with wine product information in the cloud server comprises:

uploading the feature information to the cloud server, and matching the feature information with the wine product information in the cloud server; and

the target wine product information corresponding to the feature information existing in the cloud server if at least two types of target wine product information matching the feature information exist in the wine product information in the cloud server.

5. The method according to claim 1, wherein the method further comprises a wine product positioning step:

constantly acquiring infrared signals in a wine position region by using an infrared sensor according to a preset frequency;

comparing an up-to-date infrared signal with a previous infrared signal; and

determining that the wine position region has been occupied by a wine product if it is determined according to a comparison result that the infrared signal has changed, recording position information and time information of the wine position region, and sending the position information and the time information to the cloud server.

6. A wine product information management apparatus, wherein the apparatus comprises:

a first acquisition unit configured to acquire feature information of a target wine product through a camera;

an uploading and matching unit configured to upload the feature information to a cloud server, and match the feature information with wine product information in the cloud server; and

a first recording and sending unit configured to record the target wine product in the cloud server if target wine product information corresponding to the feature information exists in the cloud server, and send a recorded result to a user terminal.

7. The apparatus according to claim 6, wherein the first acquisition unit comprises:

a first acquisition subunit configured to acquire video information of the wine product through the camera;

a first identification unit configured to identify basic information of the wine product from the video information by using an artificial intelligence dynamic image recognition algorithm, the basic information comprising a brand, a model, and year of manufacturing of the wine product; and

a first execution unit configured to use the basic information of the wine product as the feature information of the wine product.

8. The apparatus according to claim 6, wherein the first acquisition unit comprises:

a second acquisition subunit configured to acquire picture information of the wine product through the camera;

a second identification unit configured to identify text information on the wine product from the picture information by using an OCR algorithm, the text information comprising a brand, a product name, and date of manufacturing of the wine product; and

a second execution unit configured to use the text information of the wine product as the

feature information of the wine product.

9. A computer device, comprising a memory, a processor, and a computer program stored on the memory and capable of running on the processor, wherein the processor, when executing the computer program, implements the wine product information management method according to any one of claims 1 to 5.

10. A computer-readable storage medium, wherein the computer-readable storage medium stores one or more computer programs, the one or more computer programs being executable by one or more processors to implement the wine product information management method according to any one of claims 1 to 5.