

METHOD AND DEVICE FOR DETERMINING ATTRIBUTE INFORMATION OF GEOGRAPHICAL LOCATION

[0001] The present application claims priority to Chinese Patent Application No. 201610149877.6, filed with the Chinese Patent Office on March 16, 2016 and entitled
5 "METHOD AND DEVICE FOR DETERMINING ATTRIBUTE INFORMATION OF GEOGRAPHICAL LOCATION", which is incorporated here by reference in its entirety.

TECHNICAL FIELD

[0002] The present disclosure relates to the field of computer technologies, and in
10 particular, to a method and device for determining attribute information of a geographical location.

BACKGROUND

[0003] Development of information technologies helps people query various geographical locations by using terminal devices such as a mobile phone or a tablet
15 computer at anytime and anywhere.

[0004] In the existing technology, to make a travel more convenient, map navigation software provides a traffic density map. Different colors are marked for different areas, such as densely populated and sparsely populated areas, so that a user can determine, based on the density map, whether an area is densely populated.

20 **[0005]** However, it can be seen from the described process that the density map can only display population density instead of other attribute information of a geographical location, such as a level of prosperity, catering density, and entertainment density. If the user wants to obtain other attribute information of the area, the user needs to query other information. More operation steps mean less
25 convenience for the user.

[0006] For example, if a tourist comes to Beijing, and wants to go to a prosperous commercial area in Beijing, the tourist queries geographical information of Beijing by

using the map navigation software, but cannot obtain commercial area information of Beijing. The tourist identifies densely populated Huilongguan (a Taoist temple) in Changping District by using the traffic density map in the existing technology, but cannot determine whether the area is a prosperous commercial area. The tourist can
5 only query, by using other methods, whether Huilongguan is a commercial area.

[0007] Apparently, the user operation in the described process is relatively inconvenient.

SUMMARY

[0008] Implementations of the present application provide a method and device
10 for determining attribute information of a geographical location, so as to resolve a problem in the existing technology that operation inconvenience arises when a user obtains attribute information of a geographical location.

[0009] An implementation of the present application provides a method for determining attribute information of a geographical location, including: obtaining a
15 geographical feature of a geographical location from a navigation server; determining a behavior feature and a population feature of the geographical location based on pre-stored historical data; and determining attribute information of the geographical location based on at least one of the geographical feature, the behavior feature, and the population feature.

[0010] An implementation of the present application provides a device for determining attribute information of a geographical location, including: a first acquisition module, configured to obtain a geographical feature of a geographical location from a navigation server; a second acquisition module, configured to obtain a behavior feature and a population feature of the geographical location based on
20 pre-stored historical data; and a determining module, configured to determine attribute information of the geographical location based on at least one of the geographical feature, the behavior feature, and the population feature.

[0011] The present application provides a method for determining attribute information of a geographical location. A geographical feature of a geographical
30 location is obtained from a navigation server. A behavior feature and a population feature of the geographical location are determined based on pre-stored historical data. Attribute information of the geographical location is determined based on at least one

of the geographical feature, the behavior feature, and the population feature. It can be seen from the described method that a user can directly obtain, after entering the geographical location, the attribute information of the geographical location without querying information about the geographical location, thereby effectively improving user operation convenience during geographical location querying.

BRIEF DESCRIPTION OF DRAWINGS

[0012] The accompanying drawings here are used to provide further understanding of the present application, and constitute a part of the present application. Example implementations of the present application and descriptions of the implementations are used to explain the present application, and do not constitute an improper limitation to the present application. In the accompanying drawings:

[0013] FIG. 1 illustrates a process of determining attribute information of a geographical location, according to an implementation of the present application; and

[0014] FIG. 2 is a schematic structural diagram illustrating a device for determining attribute information of a geographical location, according to an implementation of the present application.

DESCRIPTION OF IMPLEMENTATIONS

[0015] To make the objectives, technical solutions, and advantages of the present application clearer, the following clearly and completely describes the technical solutions of the present application with reference to the specific implementations and the corresponding accompanying drawings of the present application. Apparently, the described implementations are some rather than all of the implementations of the present application. All other implementations obtained by a person of ordinary skill in the art based on the implementations of the present application without creative efforts shall fall within the protection scope of the present application.

[0016] FIG. 1 illustrates a process of determining attribute information of a geographical location, according to an implementation of the present application. The process includes the following steps.

[0017] S101. Obtain a geographical feature of a geographical location from a navigation server.

[0018] When a user wants to obtain attribute information of a certain geographical location, the user can first enter a name of the geographical location into a server or a terminal device, and the server or the terminal device can obtain a geographical feature of the geographical location. The geographical feature can include latitude, longitude, altitude or other metrics of the geographical location. Further, because a navigation service is widely used currently, the server can also obtain the geographical feature of the geographical location from the navigation server that provides the navigation service.

[0019] S102. Determine a behavior feature and a population feature of the geographical location based on pre-stored historical data.

[0020] In this implementation of the present application, in addition to the geographical feature, the attribute information of the geographical location further needs to be determined based on the behavior feature and the population feature of people in the geographical location. The behavior feature indicates various behavior and habit features of people in the geographical location, for example, a common consumption limit of people in a catering place or an entertainment place in the geographical location. The population feature is a feature of people in the geographical location, for example, gender distribution or age distribution.

[0021] S103. Determine attribute information of the geographical location based on at least one of the geographical feature, the behavior feature, and the population feature.

[0022] The attribute information of the geographical location can be determined based on at least one of the geographical feature, the behavior feature, and the population feature after the three features are determined. For example, a specified algorithm model can be pre-trained based on the three features and the attribute information to be determined. Therefore, the three features can be determined and directly entered into the pre-trained algorithm model, to obtain the output attribute information of the geographical location.

[0023] Alternatively, a score of each needed feature is obtained, and weighting calculation is eventually performed to obtain the attribute information of the geographical location. First, scores of the geographical feature, the behavior feature, and the population feature of the geographical location can be separately obtained. The scores can be obtained as follows: the server or the terminal device compares the three features of the geographical location with three corresponding features of other

geographical locations, ranks these geographical locations based on a specific rule, and eventually obtains scores based on the ranks. Or the server or the terminal device can present the three features of the geographical location, and the staff voluntarily gives scores based on the three features.

5 **[0024]** Weights respectively corresponding to the geographical feature, the behavior feature, and the population feature of the geographical location can be determined after the scores of the three features are separately obtained, and then weighting calculation is performed based on a score and a weight of each feature. A weighted sum is an attribute value of the geographical location. The attribute
10 information of the geographical location can be determined based on the attribute value. The weight of each feature can be determined by using at least integrity, authenticity, and importance of the feature. In other words, the weight of each feature is determined by using an integrity weight, an authenticity weight, and an importance weight of the feature.

15 **[0025]** It can be seen from the described method that the user can directly obtain, after entering the geographical location, the attribute information of the geographical location without querying the attribute information of the geographical location in another method, thereby effectively improving user operation convenience during geographical location querying.

20 **[0026]** An example that the attribute information of the geographical location is commercial value is used below, to describe a detailed process of determining the commercial value of the geographical location.

[0027] First, a server configured to determine and provide the commercial value of the geographical location can obtain, from the navigation server, at least one of
25 historical query frequency information of the geographical location, population distribution information of the geographical location, basic geographical information of the geographical location, and category information of the geographical location to serve as the geographical feature.

[0028] Then online information and offline information are obtained from a
30 payment server to serve as the behavior feature. The online information includes, but is not limited to, historical payment information of the geographical location. The offline information includes, but is not limited to, historical offline transaction information of the geographical location and evaluation information of the geographical location.

[0029] Similarly, at least one of consumption feature information and age distribution information of users in the geographical location is obtained from the payment server to serve as the population feature.

[0030] Information included in the geographical feature, the behavior feature, and the population feature can be shown in Table 1.

Table 1

Feature	Information included in the feature	Information example
Geographical feature	Historical query frequency information of the geographical location	Frequency of searching, navigating, and querying geographical location A in a specific historical time period (for example, within past three years) by users
	Population distribution information of the geographical location	Population density distribution in geographical location A at different time points in a specific time period (for example, one day)
	Basic geographical information of the geographical location	Latitude and longitude information, altitude information, and information about most frequent weather of geographical location A
	Category information of the geographical location	Geographical location A is one of predetermined categories, such as a tourist attraction, a residential area, an office area, or a commercial area
Behavior feature	Historical payment information (online information) of the geographical location	Historical average usage amount, average payment amount, usage peak hour, and usage off-peak hour of each of water, electricity, and gas in geographical location A in a specified period (for example, one month)
	Historical offline transaction information (offline information) of the geographical location	Historical average offline transaction amount (for example, offline transaction amount generated by using a POS machine) in geographical location A in a specified period
	Evaluation information (offline information) of the geographical location	User evaluation of geographical location A based on various predetermined indicators, for example, parking convenience, service quality,

		and commodity diversity
Population feature	Age distribution information of users in the geographical location	Population age distribution information of geographical location A (for example, percentage of people in each predetermined age group)
	Consumption feature information of users in the geographical location	Per capita consumption amount, per capita consumption frequency, and per capita consumption product category distribution (for example, percentage of a predetermined product category such as clothes, food, electronics, and appliances) in geographical location A in a specified period

[0031] Certainly, in addition to the described information, each feature shown in Table 1 can further include other information provided that the information is obtained by the navigation server and the payment server through statistics collection.

5 For example, the population feature can further include gender distribution information, occupation distribution information, or other relevant information of the users in the geographical location.

[0032] It is worthwhile to note that the behavior feature shown in Table 1 can be obtained through statistics collection by using historical data on the payment server.

10 When the historical payment information of the geographical location is obtained through statistics collection, payment logs of water, electricity, and gas generated in the geographical location and stored on the payment server can be obtained, and then the average payment amount, the average usage amount, the peak hour, and the off-peak hour of electricity and gas in a specified cycle are calculated based on a

15 payment amount, a usage amount, or a payment time etc. recorded in each log. When statistics collection is performed on the offline transaction information, a bank transfer record can be obtained by using the payment server, and an average transfer transaction amount in the geographical location in a specified period is determined based on the transfer record. When statistics collection is performed on the evaluation

20 information, a user score for each indicator (for example, parking convenience) in the geographical location that is stored on the payment server can be obtained, and each average indicator score is calculated.

[0033] When statistics collection is performed on the population feature, a user, whose at least one receiving address is the geographical location, can be determined as a user in the geographical location based on a receiving address corresponding to each user account stored on the payment server. When statistics collection is performed on age distribution information of these users, age distribution of the users in the geographical location can be obtained through statistics collection based on user ages recorded in these user accounts stored on the payment server. For example, four age groups can be predetermined: 0–10, 10–20, 20–50, and 50–70. A user quantity in each age group is calculated, and a percentage of users in each age group in all users is calculated. When statistics collection is performed on the consumption feature information of the users in the geographical location, a total consumption amount, total consumption frequency, and consumption frequency of each type of products of each user in a specified period can be calculated based on a transaction record of each user in the period stored on the payment server, and consumption distribution of each type of products of each user is obtained through statistics collection based on the consumption frequency of each type of products of the user.

[0034] In addition, when statistics collection is performed on the population feature, the users in the geographical location can be divided by permanent resident features and non-permanent resident features, and statistics collection is separately performed on the two types of users. When the users are divided into the permanent resident users and the non-permanent resident users, a transaction record of each user stored on the payment server can be obtained. It is determined whether a quantity of or a percentage of transaction records including a receiving address being the geographical location exceeds a predetermined threshold; and if yes, the user is determined as the permanent resident user in the geographical location; otherwise, the user is determined as the non-permanent resident user in the geographical location.

[0035] The attribute information of the geographical location can be determined based on at least one of the geographical feature, the behavior feature, and the population feature after the three features are obtained through statistics collection by using the described method. A specific process is as follows:

[0036] Step 1: Obtain a score of each information included in each feature shown in Table 1, and predetermine an interval range for each information. Different interval ranges correspond to different scores. For example, as shown in Table 2, when the commercial value is determined, a score of a residential area is less than a score of a

commercial area in the geographical feature because the commercial area is a concentrated consumption area including more restaurants, entertainment places, shopping malls, etc., but the residential area is only a concentrated residential area where a consumption amount and consumption frequency are far less than those in the commercial area. Therefore, the score of the commercial area is higher than the score of the residential area when the category information of the geographical location is determined.

Table 2

Geographical location category	Category score
Commercial area	99
Tourist area	90
Office area	80
Residential area	60

[0037] For another example, a population age score is similarly obtained in the population feature. As shown in Table 3, people aged from 0 to 10 cannot earn for a living on their own and are completely depend on parents, and therefore the consumption capability is low. People aged from 10 to 20 are mainly middle school and high school students provided with a small amount of pocket money by parents, and therefore a consumption capability is higher than 0 to 10 but still relatively low. People aged from 20 to 50 most have a job and a fixed income source, and therefore a consumption capability is high. People aged from 50 to 70 depending on children support and retirement pension are relatively frugal, and therefore a consumption capability is lower than people from 20 to 50. Therefore, consumption capabilities of the four age groups are ranked in descending order: 20–50, 50–70, 10–20, and 0–10, and scores of the consumption capabilities of the four age groups are correspondingly declining.

Table 3

Age group	Consumption capability score
20–50	95

50-70	70
10-20	50
0-10	15

[0038] Step 2: Determine a weight of the information included in each of the geographical feature, the behavior feature, and the population feature. Authenticity and integrity of any information included in the geographical feature, the behavior feature, and the population feature are determined, and a weight of the information is determined based on the authenticity and the integrity of the information.

[0039] Because most data on the navigation server is collected through road collection, etc., and accuracy is relatively low in comparison with the payment server including real-time update changes, only authenticity of the geographical feature needs to be performed when the behavior feature and the population feature can be considered to be real. Therefore, when the authenticity of the geographical feature is determined, the authenticity of each information in the geographical feature can be determined by comparing the geographical feature with the behavior feature. For example, when authenticity of the "category information of the geographical location" in the geographical feature is determined, data obtained on the navigation server displays that geographical location A is a restaurant, but geographical location A is determined as a cinema after evaluation information or consumption feature information of geographical location A is analyzed (for example, a keyword in the evaluation information is extracted, or a consumption product category with maximum probability distribution in "consumption product category distribution" in a consumption feature is determined). Consequently, it can be determined that authenticity of "category information of geographical location A" in the geographical feature is very low, and an authenticity weight of the information is low or even 0. A specific authenticity quantization method can be as follows: A keyword in the geographical feature of geographical location A and a keyword in a behavior feature of geographical location A are extracted. For example, the keyword of the geographical feature includes taste, a serving speed, cleanliness, etc., and the keyword of the behavior feature includes audio and video, seats, fares, etc. Similarity calculation can be performed based on a natural language similarity determining algorithm. Higher similarity indicates a more real geographical feature and vice versa.

In conclusion, for any information in any feature, higher information authenticity indicates a higher authenticity weight and vice versa.

[0040] The integrity can be determined by comparing a pre-estimated data volume with an actually obtained data volume. For example, a population consumption capability of geographical location A needs to be determined by calculating an average monthly consumption amount of 1000 people in geographical location A. In other words, the pre-estimated data volume is 1000. However, only an average monthly consumption amount of 700 people is obtained from the payment server. In other words, the actually obtained data amount is 700. Therefore, the information integrity can be obtained based on a pre-divided interval range shown in Table 4 of determining whether information is complete.

Table 4

Sample quantity	Integrity determining	Weight value
900–1000	Complete	1
600–900	Relatively complete	0.7
300–600	Relatively incomplete	0.6
0–300	Incomplete	0.3

[0041] It is determined from Table 4 that the average monthly consumption amount is relatively complete information, and a corresponding weight value is 0.7.

[0042] Determining an information weight also depends on information importance in addition to information authenticity and integrity. For example, a restaurant is densely populated at a lunch time and a dinner time, and an average monthly transaction amount is relatively large, so that relatively large commercial value is given to a geographical location where parking is widely evaluated as convenient. Therefore, importance weights of the population distribution information at different time points in one day, the offline transaction amount information, and the evaluation information of geographical location A are higher than importance weights of other information included in the geographical feature, the behavior feature, and the population feature. An information importance weight can be artificially set as needed.

[0043] Step 3: Perform weighting calculation on the obtained scores, determine

the attribute information of the geographical location, and provide the attribute information of the geographical location. Each information score is multiplied by an integrity weight, an authenticity weight, and an importance weight, and then a total weight score of all information is the commercial value of the geographical location.

5 **[0044]** Afterwards, the output commercial value of geographical location A can be provided for the navigation server, so that the commercial value of geographical location A is displayed on an electronic map provided by the navigation server for the user. Marking different colors on the map based on a commercial value degree helps the user to determine an urban commercial area. Or the output commercial value is
10 provided for a credit service platform, so that the credit service platform determines, based on the commercial value of geographical location A, whether geographical location A has a repayment capability, and then performs a loan service. Or the output commercial value is provided for the user such as a small-/medium-sized business manager, to facilitate offline shop address selecting.

15 **[0045]** The attribute information of the geographical location can be determined by the payment server. Or another server can invoke the geographical feature from the navigation server, invoke the behavior feature and the population feature from the payment server, then perform weighting calculation, and eventually determine the attribute information of the geographical location.

20 **[0046]** Determining the commercial value of the geographical location is used as an example above for description. In addition to the commercial value of the geographical location, other attribute information of the geographical location can be further determined in the method shown in FIG. 1 in the present application, for example, entertainment density or catering density. The geographical feature, the
25 behavior feature, and the population feature include different information when the catering density is determined. For example, when catering density of geographical location B is determined, a geographical feature of geographical location B can include a traffic congestion degree of the area at dining time, information about a distance between the area and a nearby commercial area, size information of the area,
30 and a quantity of restaurants in the area. A behavior feature of geographical location B includes an average monthly purchase quantity of each of vegetables, meat, seafood, etc. of each restaurant in the area, an average daily diner quantity of each restaurant in the area, an average monthly usage amount of each of water, electricity, and gas of

each restaurant in the area, an average monthly tax amount of each restaurant in the area, and an average daily opening hour of each restaurant in the area. A population feature of geographical location B includes a nearby population occupation, a gender ratio, age distribution, etc.

5 **[0047]** The method for determining attribute information of a geographical location according to an implementation of the present application is described above. Based on the same idea, as shown in FIG. 2, the present application further provides a corresponding device for determining attribute information of a geographical location.

10 **[0048]** FIG. 2 is a schematic structural diagram illustrating a device for determining attribute information of a geographical location, according to an implementation of the present application. The device includes the following: a first acquisition module 201, configured to obtain a geographical feature of a geographical location from a navigation server; a second acquisition module 202, configured to obtain a behavior feature and a population feature of the geographical location based on pre-stored historical data; and a determining module 203, configured to determine attribute information of the geographical location based on at least one of the geographical feature, the behavior feature, and the population feature.

15 **[0049]** The attribute information of the geographical location includes commercial value of the geographical location.

20 **[0050]** The geographical feature includes at least one of historical query frequency information of the geographical location, population distribution information of the geographical location, basic geographical information of the geographical location, and category information of the geographical location.

25 **[0051]** The behavior feature includes online information and offline information. The online information includes historical payment information of the geographical location. The offline information includes historical offline transaction information of the geographical location and evaluation information of the geographical location.

30 **[0052]** The population feature includes consumption feature information and age distribution information of users in the geographical location.

30 **[0053]** The determining module 203 is configured to obtain a score of information included in each of the geographical feature, the behavior feature, and the population feature; determine a weight of the information included in each of the geographical feature, the behavior feature, and the population feature; and perform weighting calculation on the obtained scores to determine the commercial value of the

geographical location.

[0054] The determining module 203 is further configured to determine authenticity and integrity of any information included in the geographical feature, the behavior feature, and the population feature; and determine a weight of the information based on the authenticity and the integrity of the information.

[0055] The device further includes the following: a provision module 204, configured to provide the commercial value of the geographical location for the navigation server, so that the navigation server displays the commercial value of the geographical location on an electronic map provided for a user; or provide the commercial value of the geographical location for a credit service platform, so that the credit service platform performs a loan service based on the commercial value of the geographical location; or provide the commercial value of the geographical location for a user.

[0056] The device shown in FIG. 2 can be located on a server or a terminal device.

[0057] In typical configuration, a computing device includes one or more processors (CPU), an input/output interface, a network interface, and a memory.

[0058] The memory can include a non-persistent storage, a random access memory (RAM), a nonvolatile memory, and/or another form in a computer readable medium, for example, a read-only memory (ROM) or a flash memory (flash RAM). The memory is an example of the computer readable medium.

[0059] The computer readable medium includes persistent, non-persistent, movable, and unmovable media that can implement information storage by using any method or technology. Information can be a computer readable instruction, a data structure, a program module, or other data. A computer storage medium includes, but is not limited to, a phase-change random access memory (PRAM), a static random access memory (SRAM), a dynamic random access memory (DRAM), a random access memory (RAM) of another type, a read-only memory (ROM), an electrically erasable programmable read-only memory (EEPROM), a flash memory or another memory technology, a compact disc read-only memory (CD-ROM), a digital versatile disc (DVD), or another optical storage, a cassette, a cassette magnetic disk storage, or another magnetic storage device or any other non-transmission medium. The computer storage medium can be configured to store information that can be accessed by the computing device. Based on the definition in the present specification, the

computer readable medium does not include transitory media, for example, a modulated data signal and carrier.

[0060] It is worthwhile to further note that the terms "include", "comprise", or their any other variants are intended to cover a non-exclusive inclusion, so that a process, a method, an article, or a device that includes a list of elements not only includes those elements but also includes other elements which are not expressly listed, or further includes elements inherent to such process, method, article, or device. An element preceded by "includes a ..." does not, without more constraints, preclude the existence of additional identical elements in the process, method, article, or device that includes the element.

[0061] A person skilled in the art should understand that the implementations of the present application can be provided as a method, a system, or a computer program product. Therefore, the present application can use a form of hardware only implementations, software only implementations, or implementations with a combination of software and hardware. In addition, the present application can use a form of a computer program product that is implemented on one or more computer-usable storage media (including but not limited to a magnetic disk storage, a CD-ROM, and an optical memory) that include computer-usable program code.

[0062] The previous descriptions are merely implementations of the present application, and are not intended to limit the present application. For a person skilled in the art, the present application can have various modifications and changes. Any modifications, equivalent substitutions, improvements, etc. made in the spirit and principle of the present application shall fall in the scope of the claims in the present application.

CLAIMS

What is claimed is:

1. A method for determining attribute information of a geographical location, comprising:

5 obtaining a geographical feature of a geographical location from a navigation server;

determining a behavior feature and a population feature of the geographical location based on pre-stored historical data; and

10 determining attribute information of the geographical location based on at least one of the geographical feature, the behavior feature, and the population feature.

2. The method according to claim 1, wherein the attribute information of the geographical location comprises commercial value of the geographical location.

3. The method according to claim 2, wherein the geographical feature comprises at least one of historical query frequency information of the geographical location, population distribution information of the geographical location, basic geographical information of the geographical location, and category information of the geographical location;

15 the behavior feature comprises online information and offline information, wherein the online information comprises historical payment information of the geographical location, and the offline information comprises historical offline transaction information of the geographical location and evaluation information of the geographical location; and

the population feature comprises consumption feature information and age distribution information of users in the geographical location.

25 4. The method according to claim 2, wherein the determining an attribute of the geographical location based on at least one of the geographical feature, the behavior feature, and the population feature comprises:

obtaining a score of information comprised in each of the geographical feature, the behavior feature, and the population feature;

30 determining a weight of the information comprised in each of the geographical feature, the behavior feature, and the population feature; and

performing weighting calculation on the obtained scores to determine the

commercial value of the geographical location.

5. The method according to claim 4, wherein the determining a weight of the information comprised in each of the geographical feature, the behavior feature, and the population feature comprises:

5 determining authenticity and integrity of any information comprised in the geographical feature, the behavior feature, and the population feature; and

 determining a weight of the information based on the authenticity and the integrity of the information.

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

10 providing the commercial value of the geographical location for the navigation server, so that the navigation server displays the commercial value of the geographical location on an electronic map provided for a user; or

 providing the commercial value of the geographical location for a credit service platform, so that the credit service platform performs a loan service based on the commercial value of the geographical location; or

 providing the commercial value of the geographical location for a user.

7. A device for determining attribute information of a geographical location, comprising:

20 a first acquisition module, configured to obtain a geographical feature of a geographical location from a navigation server;

 a second acquisition module, configured to obtain a behavior feature and a population feature of the geographical location based on pre-stored historical data; and

25 a determining module, configured to determine attribute information of the geographical location based on at least one of the geographical feature, the behavior feature, and the population feature.

8. The device according to claim 7, wherein the attribute information of the geographical location comprises commercial value of the geographical location.

30 9. The device according to claim 8, wherein the geographical feature comprises at least one of historical query frequency information of the geographical location, population distribution information of the geographical location, basic geographical information of the geographical location, and category information of the geographical location;

 the behavior feature comprises online information and offline information,

wherein the online information comprises historical payment information of the geographical location, and the offline information comprises historical offline transaction information of the geographical location and evaluation information of the geographical location; and

5 the population feature comprises consumption feature information and age distribution information of users in the geographical location.

10 10. The device according to claim 8, wherein the determining module is configured to obtain a score of information comprised in each of the geographical feature, the behavior feature, and the population feature; determine a weight of the information comprised in each of the geographical feature, the behavior feature, and the population feature; and perform weighting calculation on the obtained scores to determine the commercial value of the geographical location.

15 11. The device according to claim 10, wherein the determining module is configured to determine authenticity and integrity of any information comprised in the geographical feature, the behavior feature, and the population feature; and determine a weight of the information based on the authenticity and the integrity of the information.

12. The device according to claim 7, wherein the device further comprises:

20 a provision module, configured to provide the commercial value of the geographical location for the navigation server, so that the navigation server displays the commercial value of the geographical location on an electronic map provided for a user; or provide the commercial value of the geographical location for a credit service platform, so that the credit service platform performs a loan service based on the commercial value of the geographical location; or provide the commercial value of the geographical location for a user.

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