

[CLAIMS]

1. A driving behavior scoring method, characterized in that the method comprises steps of:

accumulating sample data including sample driving data and sample insurance policy data of sample drivers;

determining a current accumulation stage of the sample data according to an accumulation amount of the sample driving data and the sample insurance policy data; and

scoring a driving behavior of the current driver by the accumulated sample data using a driving scoring method corresponding to the current accumulation stage;

~~2. The method of claim 1, characterized in that,~~

the current accumulation stage includes a cold start stage and other stages after the cold start stage;

the other stages include an initial stage, a middle stage and a late stage;

the sample data during the cold start stage does not include sample insurance policy data of sample drivers;

the sample data during the initial stage includes sample driving data for a plurality of sample drivers and a minute amount of sample insurance policy data;

the sample data during the middle stage includes sample driving data for a plurality of sample drivers and sample insurance policy data for a part of the sample drivers;

the sample data during the late stage includes sample driving data and corresponding sample insurance policy data for a plurality of sample drivers;

when the current accumulation stage is the middle stage, the scoring the driving behavior of the current driver comprises:

acquiring driving scores of a plurality of sample driver corresponding to the sample insurance policy data according to the sample insurance policy data;

performing cluster analysis on the driving data of the plurality of sample drivers to obtain a plurality of cluster centers, wherein each cluster serves as a risk grade cluster, and calculating the driving score of each risk grade cluster according to the driving scores of the plurality of sample drivers;

acquiring driving data of the current driver, and calculating a similarity distance between the driving data of the current driver and the plurality of cluster centers; and

determining a risk grade cluster corresponding to the current driver according to

the calculation result of the similarity distance, and taking the driving score of the determined risk grade cluster as the driving score of the current driver,

when the current accumulation stage is the late stage, the scoring the driving behavior of the current driver comprises:

acquiring driving scores of a plurality of sample drivers corresponding to the sample insurance policy data according to the sample insurance policy data;

extracting sample driving characteristics of the plurality of sample drivers from the sample driving data;

establishing a driving behavior scoring model according to the sample driving characteristics and the corresponding driving scores of the plurality of sample drivers, and off-line storing the driving behavior scoring model; and

scoring the driving behavior of the current driver by calling the stored driving behavior scoring model.

32. The method of claim 21, characterized in that,

when the current accumulation stage is the cold start stage, the scoring the driving behavior of the current driver comprises:

acquiring driving data of the current driver, and extracting driving characteristics of the current driver; and

obtaining a score of the driving characteristics of the current driver according to a preset scoring standard, to serve as the score of the driving behavior of the current driver.

43. The method of claim 21, characterized in that,

when the current accumulation stage is the initial stage, the scoring the driving behavior of the current driver comprises:

extracting sample driving characteristics of the sample drivers from the sample driving data of the sample drivers;

calculating distribution parameters of the sample driving characteristics according to the sample driving characteristics of the sample drivers;

acquiring driving data of the current driver, and extracting driving characteristics of the current driver; and

calculating a cumulative distribution function of the driving characteristics of the current driver according to the distribution parameters of the sample driving

characteristics, to serve as the driving behavior score of the current driver.

~~5. The method of claim 2, characterized in that,
when the current accumulation stage is the middle stage, the scoring the driving behavior of the current driver comprises:—
acquiring driving scores of a plurality of sample drivers corresponding to the sample insurance policy data according to the sample insurance policy data;—
performing cluster analysis on the driving data of the plurality of sample drivers to obtain a plurality of cluster centers, wherein each cluster serves as a risk grade cluster, and calculating the driving score of each risk grade cluster according to the driving scores of the plurality of sample drivers;—
acquiring driving data of the current driver, and calculating a similarity distance between the driving data of the current driver and the plurality of cluster centers; and
determining a risk grade cluster corresponding to the current driver according to the calculation result of the similarity distance, and taking the driving score of the determined risk grade cluster as the driving score of the current driver.—~~

~~6. The method of claim 2, characterized in that,
when the current accumulation stage is the late stage, the scoring the driving behavior of the current driver comprises:—
acquiring driving scores of a plurality of sample drivers corresponding to the sample insurance policy data according to the sample insurance policy data;—
extracting sample driving characteristics of the plurality of sample drivers from the sample driving data;—
establishing a driving behavior scoring model according to the sample driving characteristics and the corresponding driving scores of the plurality of sample drivers; and
scoring the driving behavior of the current driver by using the driving behavior scoring model.—~~

74. The method of claim ~~5~~ or 6~~1~~, characterized in that the obtaining the driving scores of a plurality of sample drivers corresponding to the policy data according to the sample insurance policy data comprises:

for the sample insurance policy data of each of the plurality of sample drivers,

performing the following operations:

- acquiring an insurance claim value from the sample insurance policy data; and
- determining the driving score which has a mapping relation with the insurance claim value according to a preset mapping relation table, to serve as the driving score of the sample driver.

85. A driving behavior scoring device, characterized in that the device comprises:
one or more processors;
storage means for storing one or more programs;
wherein when the one or more programs are executed by the one or more processors, the one or more processors are cause to
~~an accumulation module configured to~~ accumulate sample data including sample driving data and sample insurance policy data of sample drivers;
~~a determining module configured to~~ determine a current accumulation stage of the sample data according to an accumulation amount of the sample driving data and the sample insurance policy data; and
~~a scoring module configured to~~ score a driving behavior of the current driver by the accumulated sample data using a driving scoring method corresponding to the current accumulation stage.

~~9. The device of claim 8, characterized in that~~
the current accumulation stage includes a cold start stage and other stages after the cold start stage;
the other stages include an initial stage, a middle stage and a late stage;
the sample data during the cold start stage does not include sample insurance policy data of sample drivers;
the sample data during the initial stage includes sample driving data for a plurality of sample drivers and a minute amount of sample insurance policy data;
the sample data during the middle stage includes sample driving data for a plurality of sample drivers and sample insurance policy data for a part of the sample drivers;
the sample data during the late stage includes sample driving data and corresponding sample insurance policy data for a plurality of sample drivers.
when the current accumulation stage is the middle stage, the one or more processors are caused to:

acquire driving scores of a plurality of sample drivers corresponding to the sample insurance policy data according to the sample insurance policy data;

perform cluster analysis on the driving data of the plurality of sample drivers to obtain a plurality of cluster centers, wherein each cluster serves as a risk grade cluster, and calculating the driving score of each risk grade cluster according to the driving scores of the plurality of sample drivers;

acquire driving data of the current driver, and calculating a similarity distance between the driving data of the current driver and the plurality of cluster centers; and

determine a risk grade cluster corresponding to the current driver according to the calculation result of the similarity distance, and taking the driving score of the determined risk grade cluster as the driving score of the current driver,

when the current accumulation stage is the late stage, the one or more processors are caused to:

acquire driving scores of a plurality of sample drivers corresponding to the sample insurance policy data according to the sample insurance policy data;

extract sample driving characteristics of the plurality of sample drivers from the sample driving data;

establish a driving behavior scoring model according to the sample driving characteristics and the corresponding driving scores of the plurality of sample drivers, and off-line storing the driving behavior scoring model; and

score the driving behavior of the current driver by calling the stored driving behavior scoring model.

~~106.~~ The device of claim 95, characterized in that,

When the current accumulation stage is the cold start stage, the one or more processors are caused ~~scoring module is configured~~ to:

acquire driving data of the current driver, and extract driving characteristics of the current driver; and

obtain a score of the driving characteristics of the current driver according to a preset scoring standard, to serve as the score of the driving behavior of the current driver.

~~117.~~ The device of claim 95, characterized in that,

when the current accumulation stage is the initial stage, the ~~scoring module is configured~~ one or more processors are cause to:

extract sample driving characteristics of the sample drivers from the sample driving data of the sample drivers;

calculate distribution parameters of the sample driving characteristics according to the sample driving characteristics of the sample drivers;

acquire driving data of the current driver, and extract driving characteristics of the current driver; and

calculate a cumulative distribution function of the driving characteristics of the current driver according to the distribution parameters of the sample driving characteristics, to serve as the driving behavior score of the current driver.

~~12. The device of claim 9, characterized in that,
when the current accumulation stage is the middle stage, the scoring module is configured to:—~~

~~acquire driving scores of a plurality of sample drivers corresponding to the sample insurance policy data according to the sample insurance policy data;—~~

~~perform cluster analysis on the driving data of the plurality of sample drivers to obtain a plurality of cluster centers, wherein each cluster serves as a risk grade cluster, and calculate the driving score of each risk grade cluster according to the driving scores of the plurality of sample drivers;—~~

~~acquire driving data of the current driver, and calculate a similarity distance between the driving data of the current driver and the plurality of cluster centers; and~~

~~determine a risk grade cluster corresponding to the current driver according to the calculation result of the similarity distance, and take the driving score of the determined risk grade cluster as the driving score of the current driver.—~~

~~13. The device of claim 9, characterized in that,
when the current accumulation stage is the late stage, the scoring module is configured to:—~~

~~acquire driving scores of a plurality of sample drivers corresponding to the sample insurance policy data according to the sample insurance policy data;—~~

~~extract sample driving characteristics of the plurality of sample drivers from the sample driving data;—~~

~~establish a driving behavior scoring model according to the sample driving characteristics and the corresponding driving scores of the plurality of sample drivers;~~

and

~~score the driving behavior of the current driver by using the driving behavior scoring model.—~~

148. The device according to claim ~~12 or 13~~5, characterized in that the obtaining the driving scores of a plurality of sample drivers corresponding to the policy data according to the sample insurance policy data comprises:

for the sample insurance policy data of each of the plurality of sample drivers, performing the following operations:

acquiring an insurance claim value from the sample insurance policy data; and

determining the driving score which has a mapping relation with the insurance claim value according to a preset mapping relation table, to serve as the driving score of the sample driver.

~~15. A driving behavior scoring device, characterized in comprising:—~~

~~one or more processors;—~~

~~storage means for storing one or more programs;—~~

~~wherein when the one or more programs are executed by the one or more processors, the one or more processors are caused to implement the driving behavior scoring method as claimed in any one of claims 1 to 7.~~

169. A computer-readable storage medium on which a computer program is stored, wherein when the program is executed by a processor, implements the driving behavior scoring method as claimed in any one of claims 1 to 74.