CLAIMS

What is claimed is:

1. A method for object classification, the method comprising:

performing feature extraction on data of an object to be identified to obtain an object's initial feature information that includes a first number of initial features (S201) (S601);

segmenting the object's initial feature information to obtain a respective plurality of object sub-features for each of a plurality of object sub-features types (S601), wherein the plurality of types of object sub-features comprise (i) two or more of a user's static feature type, a user's dynamic feature type, or a user's associated feature type, and (ii) a historical business feature type and a real-time business feature type (S202), and wherein the segmenting comprises:

grouping the object's initial features based on a type of each initial feature in the object's initial feature information; and

obtaining the respective plurality of object sub-features for each of the plurality of object sub-features types through grouping, wherein for each of the plurality of object sub-features types: a number of the respective plurality of object sub-features is smaller than the first number;

sequentially circulating or randomly inputting the respective plurality of object sub-features for each of the plurality of object sub-features types to each level of decision tree forest set in a pre-trained deep forest network (S602); and

performing a decision classification on the object to be identified based on the pre-trained deep forest network (S603).

2. The method according to claim 1, further comprising:

training the deep forest network based on an object sample.

3. The method according to claim 2, wherein training the deep forest network based on the object sample comprises:

collecting black and white samples related to the object, performing feature extraction on data of the black and white samples to obtain the object's initial feature information, and segmenting the object's initial feature information to obtain the respective plurality of object sub-features for each of the plurality of object sub-features types.

4. The method according to claim 3, wherein training the deep forest network further comprises:

training each base classifier in a first level of decision tree forest set based on a first-type object sub-feature;

concatenating an output feature of a previous level of decision tree forest set and a next-type object sub-feature; and

training each base classifier in a next level of decision tree forest set by using the concatenated output feature.

5. The method according to claim 4, wherein it is determined whether a predetermined end condition is satisfied after training on each level of decision tree forest set is completed, and a next level of decision tree forest set is trained if the predetermined end condition is not satisfied.

6. The method according to claim 3, wherein training the deep forest network further comprises:

training each base classifier in a first level of decision tree forest set based on any one or several types of object sub-features;

concatenating an output feature of a previous level of decision tree forest set and any one or several types of object sub-features; and

training each base classifier in a next level of decision tree forest set by using a concatenated feature.

7. The method according to claim 6, wherein it is determined whether a predetermined end condition is satisfied after training on each level of decision tree forest set is completed, and a next level of decision tree forest set is trained if the predetermined end condition is not satisfied; and

completing training when the predetermined end condition is satisfied, and obtaining the deep forest network constituted of a plurality of levels of decision tree forest sets.

8. The method according to claim 4 or 6, further comprising:

training each base classifier by using a cross-validation method.

9. The method according to claim 8, the training each base classifier by using a cross-validation method comprises:

dividing the data of the black and white samples into a predetermined number of groups, and selecting any group as a validation set, and a dataset of a remaining group as a training set; and

training each base classifier in each level of decision tree forest set by using each training set, and validating each base classifier in each level of decision tree forest set by using each corresponding validation set in a process of training each level of decision tree forest set.

10. The method according to claim 5 or 7, wherein the predetermined end condition is based on an evaluation index or a maximum number of network layers.

11. An apparatus for object classification, the apparatus comprising a plurality of modules configured to perform the method of any one of claims 1 to 10.