

CLAIMS

What is claimed is:

1. A computer-implemented method for sample prediction, comprising:
 - obtaining a sample to be tested, wherein the sample to be tested comprises
 - 5 feature data with a given dimension, and wherein the given dimension is a first quantity;
 - performing a first dimension reduction process on the sample to be tested;
 - generating a first processed sample of a first dimension that is less than the first quantity based on performing the first dimension reduction process on the sample to be tested;
 - 10 performing a different second dimension reduction process on the sample to be tested, wherein the second dimension reduction process and the first dimension reduction process are different processes;
 - generating a second processed sample of a second dimension that is less than the first quantity based on performing the second dimension reduction process on the
 - 15 sample to be tested;
 - inputting the first processed sample of the first dimension to a first processing model, wherein the first processing model generates a first score of the first processed sample based on a first hypersphere determined by using a support vector domain description (SVDD) method in a first space corresponding to the first dimension;
 - 20 inputting the second processed sample of the second dimension to a corresponding second processing model, where the second processing model generates a second score of the second processed sample based on a second hypersphere determined by using the SVDD method in a second space corresponding to the second dimension;
 - 25 determining a comprehensive score of the sample to be tested based on at least the first score of the first processed sample and the second score of the second processed sample; and
 - classifying, based on the comprehensive score, the sample to be tested.
- 30 2. The computer-implemented method of claim 1, wherein the first dimension reduction process and the second dimension reduction process comprise at least one of an operation dimension reduction method and a feature sampling dimension reduction method.

3. The computer-implemented method of claim 2, wherein the operation dimension reduction method comprises one or more of the following:

5 a principal component analysis (PCA) method, a least absolute shrinkage and selection operator (LASSO) method, a linear discriminant analysis (LDA) method, and a wavelet analysis method.

4. The computer-implemented method of claim 2, wherein the feature sampling dimension reduction method comprises one or more of the following:

10 a random sampling method, a hash sampling method, a filter feature selection method, and a wrapper feature selection method.

5. The computer-implemented method of claim 1, wherein the first processing model is trained by performing the following steps:

15 obtaining a historical sample set, wherein a sample dimension of the historical sample set is the first quantity;

processing the historical sample set as a low-dimensional historical sample set of the first dimension by using the first dimension reduction process, wherein the first dimension is less than the first quantity; and

20 determining the first hypersphere in the first space corresponding to the first dimension by using the SVDD method, wherein a quantity of samples in the low-dimensional historical sample set are surrounded by the first hypersphere, and wherein a radius of the first hypersphere satisfies a predetermined condition.

25 6. The computer-implemented method of claim 1, wherein determining the comprehensive score of the sample to be tested comprises:

determining a relative location of the first processed sample relative to the first hypersphere in the first space corresponding to the first dimension; and

30 determining the first score of the first processed sample based on the relative location.

7. The computer-implemented method of claim 6, wherein the relative location comprises one of the following:

outside, inside, or above the first hypersphere;

a distance between the first processed sample and a center of the first hypersphere in the first space corresponding to the first dimension; and

a distance between the first processed sample and a nearest surface of the first hypersphere in the first space corresponding to the first dimension.

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8. The computer-implemented method of claim 1, wherein determining the comprehensive score of the sample to be tested comprises:

performing weighted summation on at least the first score of the first processed sample and the second score of the second processed sample.

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9. A computer-readable storage medium, wherein the computer-readable storage medium stores a computer program, and when the computer program is executed in a computer, the computer is enabled to perform the method according to any one of claims 1 to 8.

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10. A computing device, comprising a memory and a processor, wherein the memory stores executable code, and when the processor executes the executable code, the method according to any one of claims 1 to 8 is implemented.