

CLAIMS

[Claim 1]

A training support device comprising:

5 a training data acquisition unit, realized by a central processing unit, configured to acquire training data having first data given a first label and second data given a second label;

a training candidate data acquisition unit, realized by the central processing unit, configured to acquire at least one piece of training candidate data given any one of the first label and the second label;

10 a derivation unit, realized by the central processing unit, configured to derive, for each piece of training data, a feature quantity of the training data represented in a feature space having predetermined dimensions, on the basis of a model trained on a neural network using the training data so that target data is classified into any one of the first label
15 and the second label, and the training data, and derive, for each piece of training candidate data, a feature quantity of the training candidate data represented in the feature space, on the basis of the model and the at least one piece of training candidate data;

20 a calculation unit, realized by the central processing unit, configured to calculate, for each piece of training candidate data, a first distance, the first distance being a distance between the training candidate data and the first data in the feature space, and a second distance, the second distance being a distance between the training candidate data and the second data in the feature space, on the basis of the feature quantity
25 of the training data and the feature quantity of the at least one piece of training candidate data; and

a selection unit, realized by the central processing unit, configured to select data to be added as the training data from among the at least one piece of training candidate data, on the basis of the distance for each piece of training candidate data calculated by the calculation unit.

[Claim 2]

The training support device according to claim 1, wherein the selection unit increases a probability of the training candidate data being selected from the at least one piece of training candidate data when the first distance of the training candidate data given the second label is smaller.

[Claim 3]

The training support device according to claim 1, wherein the selection unit increases a probability of the training candidate data being selected from the at least one piece of training candidate data when the second distance of the training candidate data given the first label is smaller.

[Claim 4]

The training support device according to any one of claims 1 to 3, wherein the calculation unit calculates an evaluation value by using the first distance and the second distance for each piece of training candidate data, and

the selection unit selects data to be added as the training data from among the at least one piece of training candidate data, on the basis of the evaluation value for each piece of training candidate data.

[Claim 5]

The training support device according to any one of claims 1 to 4,

further comprising a display unit configured to display the data selected by the selection unit.

[Claim 6]

The training support device according to claim 5, further comprising:

an input unit configured to receive an input of a user operation; and

a changing unit configured to change the label given to the data when a user operation for changing the label given to the data displayed on the display unit is input to the input unit.

[Claim 7]

The training support device according to claim 5, wherein the selection unit causes the display unit to display a determination result when it is determined that data to be added as the training data from among the at least one piece of training candidate data does not exist, on the basis of the first distance and the second distance.

[Claim 8]

A training device comprising:

a training data acquisition unit, realized by a central processing unit, configured to acquire training data having first data given a first label and second data given a second label;

a training candidate data acquisition unit, realized by the central processing unit, configured to acquire at least one piece of training candidate data given any one of the first label and the second label;

a derivation unit, realized by the central processing unit, configured to derive, for each piece of training data, a feature quantity of

the training data represented in a feature space having predetermined dimensions, on the basis of a model trained on a neural network using the training data so that target data is classified into any one of the first label and the second label, and the training data, and derive, for each piece of training candidate data, a feature quantity represented in the feature space, on the basis of the model and the at least one piece of training candidate data;

a calculation unit, realized by the central processing unit, configured to calculate, for each piece of training candidate data, a first distance, the first distance being a distance between the training candidate data and the first data in the feature space, and a second distance, the second distance being a distance between the training candidate data and the second data in the feature space, on the basis of the feature quantity of the training data and the feature quantity of the at least one piece of training candidate data;

a selection unit, realized by the central processing unit, configured to select data to be added as the training data from among the at least one piece of training candidate data, on the basis of the distance for each piece of training candidate data calculated by the calculation unit; and

a training unit configured to train the model by using the data selected by the selection unit.

[Claim 9]

A training support method comprising:

a first step of acquiring, by a training data acquisition unit of a central processing unit, training data having first data given a first label

and second data given a second label, and at least one piece of training candidate data given any one of the first label and the second label;

a second step of deriving, by a derivation unit of the central processing unit, for each piece of training data, a feature quantity of the training data represented in a feature space having predetermined dimensions, on the basis of a model trained on a neural network using the training data so that target data is classified into any one of the first label and the second label, and the training data, and deriving, for each piece of training candidate data, a feature quantity of the training candidate data represented in the feature space, on the basis of the model and the at least one piece of training candidate data;

a third step of calculating, by a calculation unit of the central processing unit, for each piece of training candidate data, a first distance, the first distance being a distance between the training candidate data and the first data in the feature space, and a second distance, the second distance being a distance between the training candidate data and the second data in the feature space, on the basis of the feature quantity of the training data and the feature quantity of the at least one piece of training candidate data; and

a fourth step of selecting, by a selection unit of the central processing unit, data to be added as the training data from among the at least one piece of training candidate data, on the basis of the distance for each piece of training candidate data calculated in the third step.

[Claim 10]

A training support program for causing a computer to function as the training support device according to any one of claims 1 to 7.