What is claimed is:

1. An object recognition system that includes a storage unit and a learning control unit, wherein

the storage unit includes

an image unit that stores an image of an object,

a label unit that stores a label which is information related on a task which is an attribute of the object, and

an estimator that estimates the task of the object, and outputs an estimation result,

the estimator includes

an object feature extraction unit that extracts an object feature value from the image,

a plurality of task-specific identification units that receives said feature value and respectively stored parameters and identifies respective identification information by the respective task, and

a connection switch that stores connection information between the object feature extraction unit and the plurality of task-specific identification units, and

the learning control unit changes a connection relationship between the object feature extraction unit and the plurality of task-specific identification units by

changing the connection information stored in the connection switch according to a type of the label,

wherein where the image is a person image, the object feature value is a third-order tensor from the person image to distinguish between persons, and the object feature extraction unit converts the person image into the third-order tensor, and

for person images of a same person, the object feature extraction unit is parameter-tuned such that third-order tensors are close to each other.

2. The object recognition system according to claim 1, wherein

the label unit stores a learning data set which is a combination of the image and a correct answer label which is a correct answer value of the task of the object.

3. The object recognition system according to claim 1, wherein

the task-specific identification units are constituted by a neural network,

the neural network has a parameter updatable by learning, and the task-specific identification units decode the information related to the task for the object feature value.

4. The object recognition system according to claim 3, wherein

the learning control unit tunes the parameter by the learning by using the learning data set, and changes an output value of the estimation result by the parameter.

5. The object recognition system according to claim 3, wherein

the learning control unit compares a correct answer label with the estimation result, obtains a task loss which is an error between the estimation result and the correct answer label, and transmits the obtained task loss to the estimator, and

updates the parameter of a task-specific identification unit so as to decrease the task loss.

6. The object recognition system according to claim 5, wherein

the storage unit further includes a learning history storage unit that stores a learning result up to a latest point of time, and

the learning history storage unit stores the task loss as the learning result.

7. The object recognition system according to claim 3, wherein

the learning control unit changes a degree of update for controlling intensity of update of the parameter of a task-specific identification unit.

8. The object recognition system according to claim 7, wherein

the estimator further includes an update degree storage unit that stores the degree of update.

9. An object recognition method using an object recognition system that includes a storage unit and a learning control unit, the method comprising:

storing, by the storage unit, an image of an object and a label which is information related to a task which is an attribute of the object;

extracting, by an object feature extraction unit, an object feature value from the image of the object;

identifying, by a plurality of task-specific identification units, the respective identification information by the respective task in accordance with the received feature value and respectively stored parameters; and

changing, by the learning control unit, a connection relationship between the object feature extraction unit and the plurality of task-specific identification units according to a type of the label, estimating the task of the object, and outputting an estimation result,

wherein where the image is a person image, the object feature value is a third-order tensor from the person image to distinguish between persons, and the method further comprises converting, by the object feature extraction unit, the person image into the third-order tensor, and

the method further comprises, for person images of a same person, parameter-tuning the object feature extraction unit such that third-order tensors are close to each other.

10. The object recognition method according to claim 9, further comprising:

retaining, by the task-specific identification units, a parameter updatable by learning; and

tuning, by the learning control unit, the parameter by learning by using a learning data set which is a combination of the image and a correct answer label which is a correct answer value of the task of the object, and changing an output value of the estimation result by the parameter.

11. The object recognition method according to claim 10, further comprising:

comparing, by the learning control unit, the correct answer label with the estimation result, obtaining a task loss which is an error between the estimation result and the correct answer label, and updating the parameter of a task-specific identification unit so as to decrease the task loss.