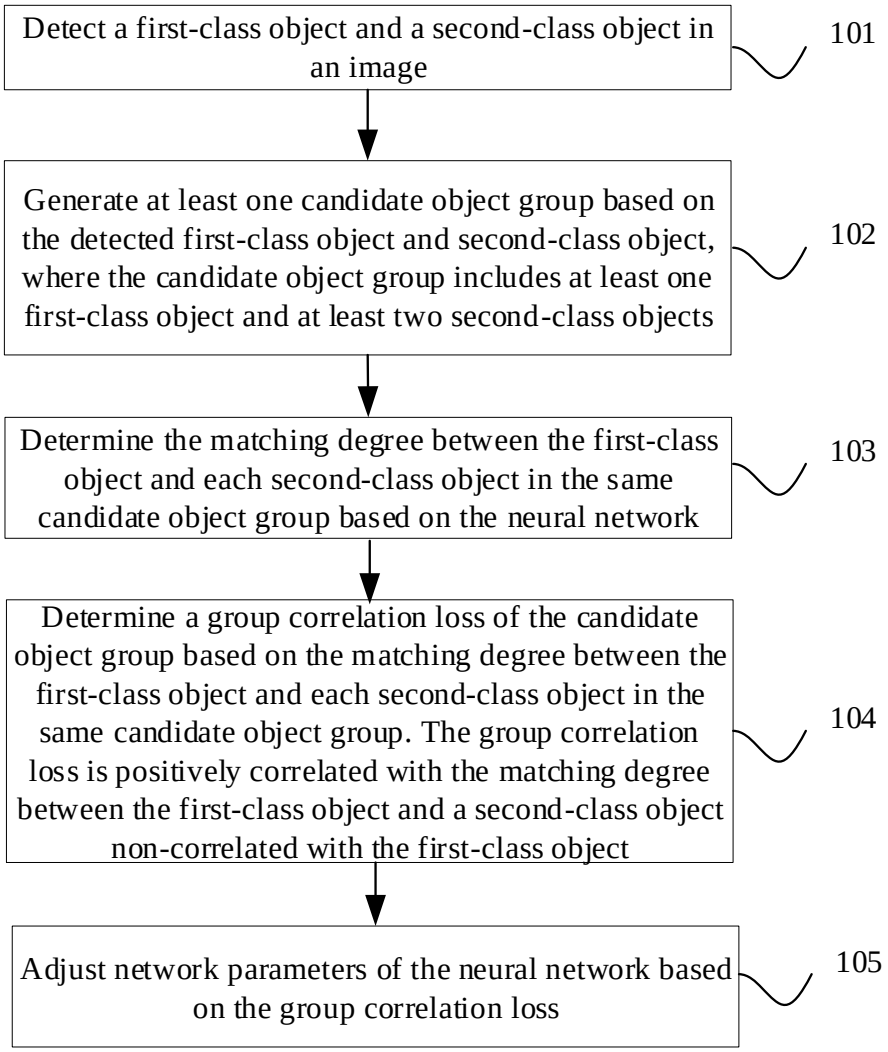
Detect a first-class object and a second-class object in an image
101
Generate at least one candidate object group based on the detected first-class object and second-class object, where the candidate object group includes at least one first-class object and at least two second-class objects
102
Determine the matching degree between the first-class object and each second-class object in the same candidate object group based on the neural network
103
Determine a group correlation loss of the candidate object group based on the matching degree between the first-class object and each second-class object in the same candidate object group. The group correlation loss is positively correlated with the matching degree between the first-class object and a second-class object non-correlated with the first-class object
104
Adjust network parameters of the neural network based on the group correlation loss
105

FIG.1

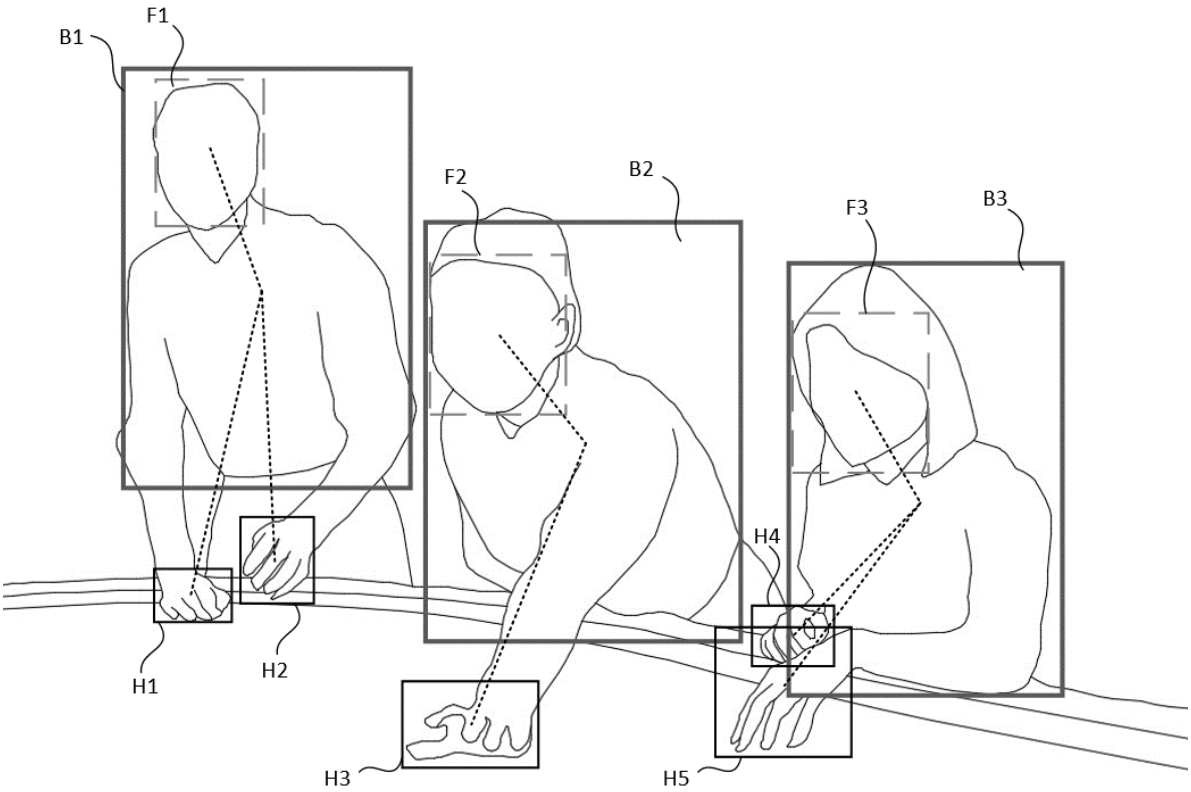
B1
F1
F2
B2
F3
B3
H1
H2
H3
H4
H5

FIG.2

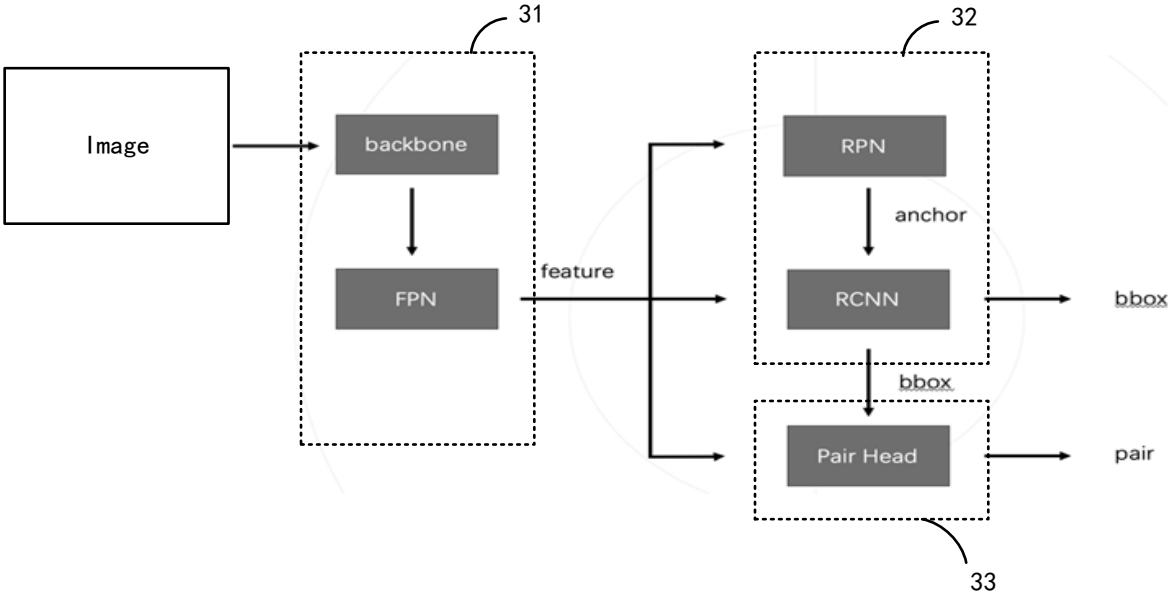
31
32
Image
backbone
FPN
feature
RPN
anchor
RCNN
bbox
bbox
Pair Head
pair
33

FIG.3

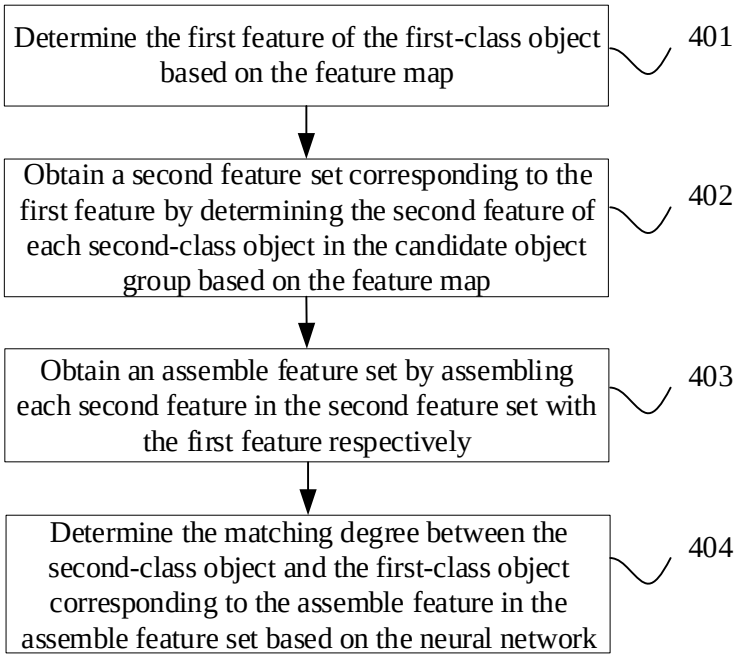
Determine the first feature of the first-class object based on the feature map
401
Obtain a second feature set corresponding to the first feature by determining the second feature of each second-class object in the candidate object group based on the feature map
402
Obtain an assemble feature set by assembling each second feature in the second feature set with the first feature respectively
403
Determine the matching degree between the second-class object and the first-class object corresponding to the assemble feature in the assemble feature set based on the neural network
404

FIG. 4

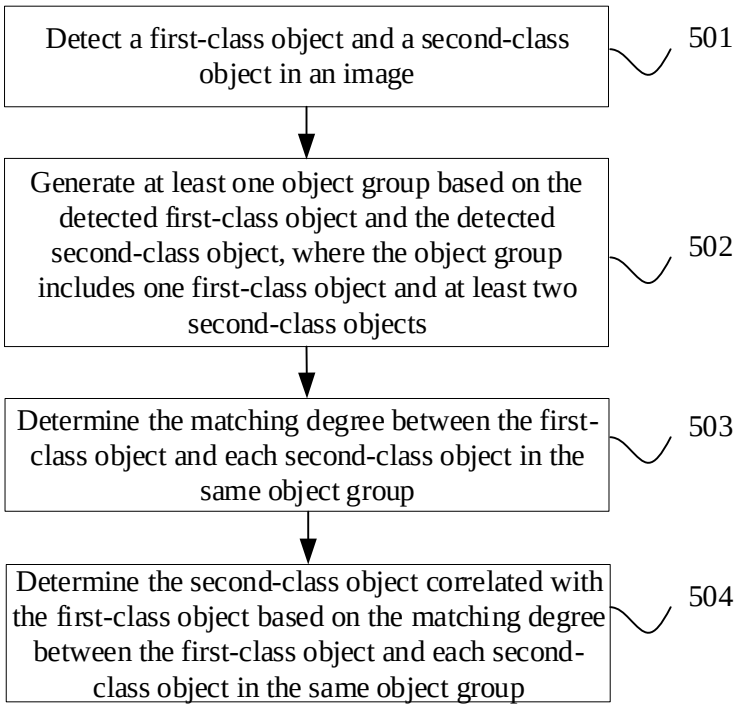
Detect a first-class object and a second-class object in an image
501
Generate at least one object group based on the detected first-class object and the detected second-class object, where the object group includes one first-class object and at least two second-class objects
502
Determine the matching degree between the first-class object and each second-class object in the same object group
503
Determine the second-class object correlated with the first-class object based on the matching degree between the first-class object and each second-class object in the same object group
504

FIG. 5

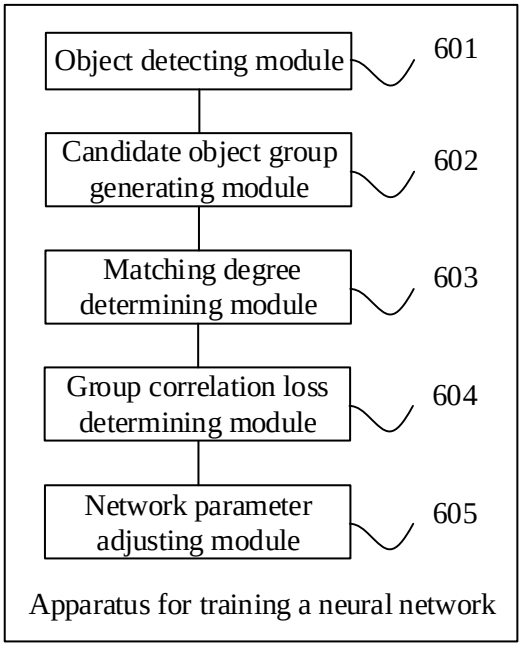
Object detecting module
601
Candidate object group generating module
602
Matching degree determining module
603
Group correlation loss determining module
604
Network parameter adjusting module
605
Apparatus for training a neural network

FIG. 6

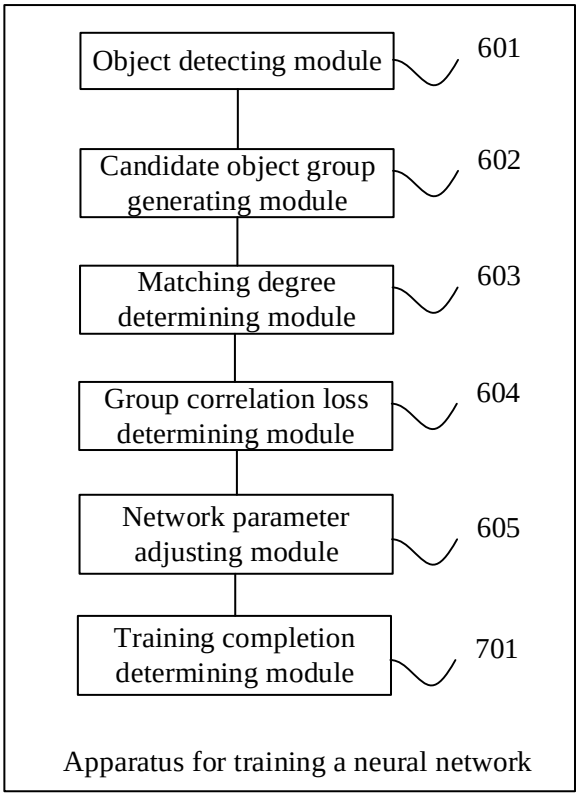
Object detecting module
601
Candidate object group generating module
602
Matching degree determining module
603
Group correlation loss determining module
604
Network parameter adjusting module
605
Training completion determining module
701
Apparatus for training a neural network

FIG. 7

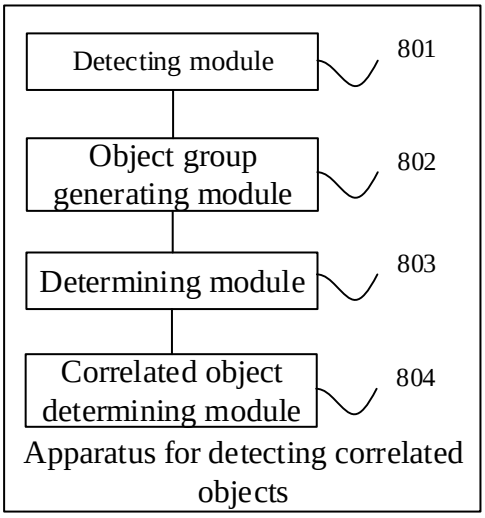
Detecting module
801
Object group generating module
802
Determining module
803
Correlated object determining module
804
Apparatus for detecting correlated objects

FIG. 8

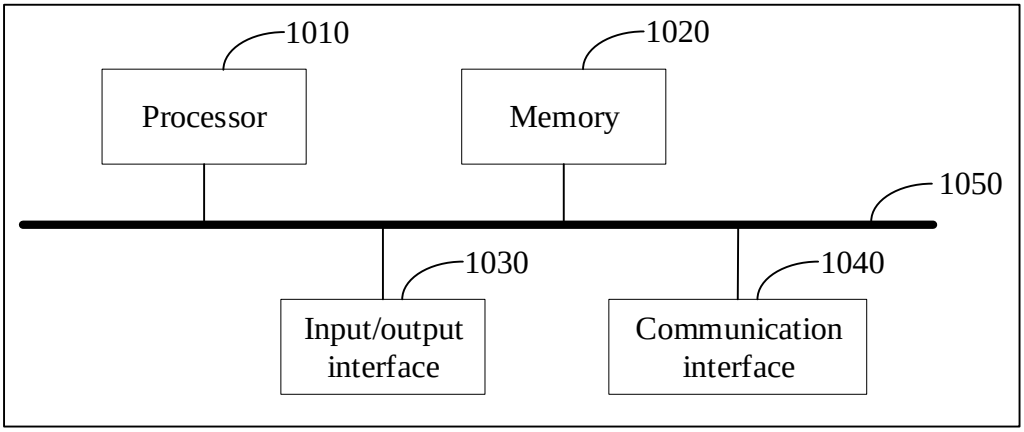
1010
Processor
1020
Memory
1050
1030
Input/output interface
1040
Communication interface

FIG. 9