

## **ABSTRACT**

### **PERSONALIZED FEDERATED LEARNING METHOD, USER AUTHENTICATION METHOD, AND DEVICE PERFORMING THE SAME**

A personalized federated learning method performed by a processor of a user terminal operating in conjunction with a server, the method comprising: generating input data based on user data received through an interface of the user terminal; inputting the input data into a first learning model provided in the user terminal and training the first learning model using the corresponding output; transmitting local parameters for weights of a neural network included in the first learning model to the server; receiving global parameters derived based on the local parameters from the server; and inputting the input data into the first learning model, to which the global parameters are applied, and a second learning model associated with the first learning model, and training the second learning model using the corresponding output.

Figure 4