CHAPTER 31

# The Multilayer Perceptron (MLP)

The multilayer perceptron (MLP) is the fundamental example of a deep neural network. The architecture of a MLP consists of multiple hidden layers to capture more complex relationships that exist in the training dataset. Another name for the MLP is the deep feedforward neural network (DFN). An illustration of an MLP is shown in Figure 31-1.

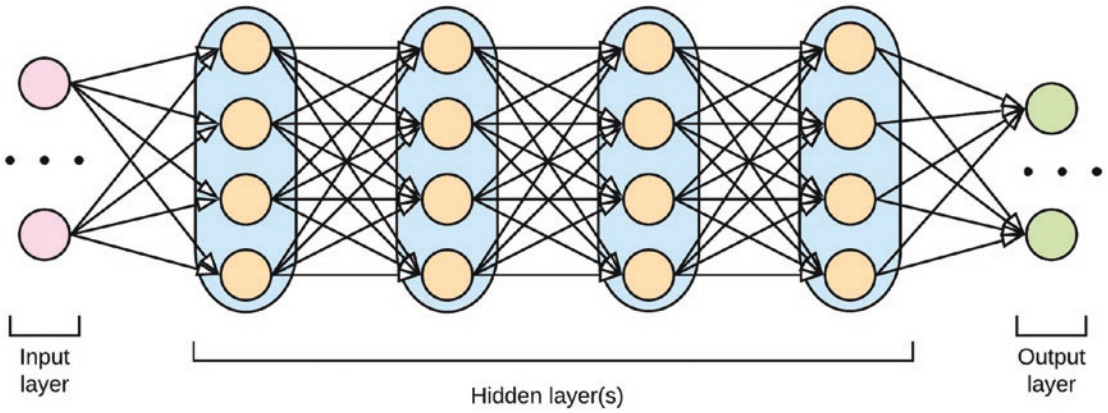


***Figure 31-1.*** *Deep feedforward neural network*

## The Concept of Hierarchies

The more the number of hidden layers in a neural network, the deeper the network becomes. Deep networks are able to learn more sophisticated representations of the inputs. The concept of hierarchical representation is when each layer learns a set of features that describe the input and hierarchically pass that information across the hidden layers. Initially, the hidden layers closer to the input layer learn a simple set




E. Bisong, *Building Machine Learning and Deep Learning Models on Google Cloud Platform*,
https://doi.org/10.1007/978-1-4842-4470-8_31