A logistic regression model is a classification algorithm that can analyze continuous and categorical variables. Using a combination of input variables, logistic regression predicts the probability of the input data belonging to one of two groups. If the probability is above a predetermined cutoff, the sample is assigned to the first group, otherwise it is assigned to the second. For example, using an applicant's personal information (such as age and income), logistic regression could be used by a bank to determine if a person does or does not qualify for a credit card.

At the heart of the logistic regression model is the sigmoid curve, which is used to produce the probability (between 0 and 1) of the input data belonging to the first group. This sigmoid curve is the exact same curve used in the sigmoid activation function of a neural network. In fact, a basic neural network using the sigmoid activation function is effectively a logistic regression model:

