Logistic Regression Overview

Logistic regression makes use of the sigmoid function which outputs a probability between 0 and 1. The sigmoid function with some weight parameter *θ* and some input *x*(i) is defined as follows.

Chart

Description automatically generated

Note that as *θ*T*x*(i) gets closer and closer to −∞ the denominator of the sigmoid function gets larger and larger and as a result, the sigmoid gets closer to 0. On the other hand, as *θ*T*x*(i) gets closer and closer to ∞ the denominator of the sigmoid function gets closer to 1 and as a result the sigmoid also gets closer to 1.

Now given a tweet, you can transform it into a vector and run it through your sigmoid function to get a prediction as follows:

Chart, line chart

Description automatically generated