**Trade Off between Overfitting and underfitting**

As was observed from the Softmax Regression, this algorithm tends to underfit the data due to high bias. Comparatively, Neural networks algorithm tends to fit the data layer as the additional hidden layers and the back propagation help in eliminating the bias. However, this approach introduces the problem of over-fitting. Problem with over-fitting is that though the algorithm fits the data perfectly it fails to accurately predict.

One method for improving the performance of Neural networks is to generalize the algorithm. Couple of techniques to achieve this are:

1. Early Stopping
2. Regularization