

Neural networks and Back Propagation

Hans Mathias Mamen Vege

December 2, 2018

1 Introduction

A short presentation on back propagation is given, in the derivation of the back propagation algorithm is given. This is done as an exercise as well as an future reference for the author.

We begin with an short presentation of the layout of a neural network, then we will go through and present different cost functions and different output activations. A presentation of middle layer activations is also given. Then, we will begin deriving the back-propagation and the gradients which will be used to change the weights and biases in a neural network.

2 A neural network

3 Cost functions

4 Activation functions

4.1 Output layer activation

4.2 Layer activation

5 Deriving the back propagation