FYS-2021 Exercise Set 6

Exercise 6.1: Forward-Backward Pass

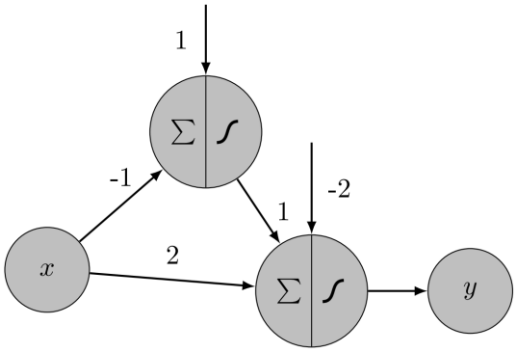

Figure 1. MLP with two logistic units

(a) Both neurons use the logistic activation function ($u \mapsto \frac{1}{1+e^{-u}}$). The network has a single input variable x and one output variable y. Calculate the output of both neurons and the error made by the MLP when applying a pattern with $x = 0$ and target value $t = 0.5$.

Exercise 6.2: Chain Rule in MLP (from book 11.5)

(a) Derive the update equations for an MLP with two hidden layers (assuming both hidden layers use sigmoid activation function).