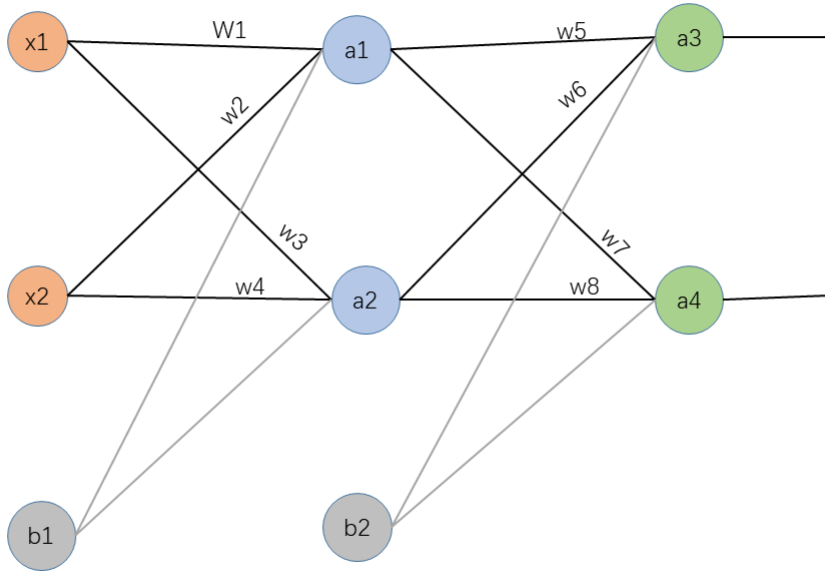# Study Report

Shuo Xu

July 28, 2018

Abstract

This report is mainly about the derivation process of the formulas backpropagation and calculation method of matrix form.

1 Derication pross

My derivation is about the picture above, and the following are the formulas I will use.

$$Z = WA + b$$

$$A = f(Z) = \frac{1}{1 + e^{-Z}}$$

$$L = \frac{1}{m} \sum_{i=1}^{m} (Y - A)^2$$

The upper case letters in the formula are all matrix forms, I will first complete the computation one by one, and then simplify the expression in matrix form.

Forward propagation