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CIS 635: data mining

3/17/19

Homework 6

**Part 1**

1. 1.4
2. 0.5

**Part 2**

1. Function

updateWeights <- function(data, pW, learnRate){

d = ncol(data)

dataMatrix = as.matrix(cbind(1.0,data[,1:d-1]))

predClass = sign(dataMartrix %% pW)

value = learnRate\*(data[,3]-predClass)

weight = pw + colSums(dataMatrix\*c(value))

return(weight)

}

1. Second function

Part 3

1. class = as.factor(data$class)

ind = class==0

matrix = data.matrix(data[ind!=0,])

set.seed(1)

nn<-neuralnet(class == "class"~var1+var2+var3+var4,data,hidden=3, linear.output = T)

plot(nn)

dataMat = data.matrix(data[ind==0,])

dataMat[,3]= dataMat[,3]\*2-3

pred = compute(nn,dataMat[,1:4])

table(sign(pred$net.result),dataMat[,5])

1. Plot the networkA close up of a map

   Description automatically generated
2. Confusion matrix:

2

-1 38

1 2211