

Tutku Kılıçaslan
0054201
ENGR 421
Mehmet Gönen
HW #3

- 1) At the very first, I added safelog function to prevent minus values within log function.
- 2) After this, I imported the data given hw03.zip file. I divided pixels into two groups as training and test and applied the same procedure for labels too. I also implement initial W and v values.
- 3) I constructed a sigmoid function by applying the function (10.42) in the book. I will be using this function to reach to the hidden layer by using W and training data.
- 4) I also constructed softmax function by applying the function (11.26) in the book. I will be using this function to reach to the output layer by using Z and v values.
- 5) I copied the gradient functions from our lab sessions and adopted to my code by using gradient functions in the book (11.28 and 11.29)
- 6) I applied one-of-K-coding code in lab04 into my codes to obtain Y_truth which is conformable matrix with $y_predicted$.
- 7) I added the values which are given like initial W , v , and I found the first objective value which is given in the book (11.27)
- 8) I constructed a while loop that improve W and v as the objective value decreases.
- 9) At the end, I got a new W and v . I drew my plot showing my error values as the iteration goes on until 500.
- 10) I printed my confusion matrix which is same with the homework file.
- 11) I applied the same procedure for my test data by using new W and v values and obtained the same confusion matrix as the homework file.