

ID5030- Machine learning for Engineering and science applications
Homework 4 – Logistic Regression-Neural Networks-Binary & Multiclass
classification

Assignment Given on : Feb 20 , 2023

Due Date : Feb 24th , 2023 (Online submission)

Context : The purpose of this assignment is to

- a) Understand Logistic regression for a simple case
- b) Understand multiclass classification for a simple case

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1. Consider the OR gate truth table as discussed in class
 - a. Write a python code implementing logistic regression (using gradient descent) from scratch and use the same to replicate OR gate
 - b. Modify the code for AND and XOR gates.Comment on the meaning of the converged weights you obtained above.
2. Download the IRIS dataset (<https://archive.ics.uci.edu/ml/datasets/iris>)
 - a. Write gradient descent code to perform multiclass classification using the entire dataset for training
 - b. Report on the confusion matrix for this