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Project 2 Perceptron and MLP Experiment

         My experiments by applying perceptron and machine learning perceptron on Project 2 for a fixed number of iterations within the one thousand have proven unexpected results compared to Project 1. I can conclude that based on my training model and dataset from heart disease, the perceptron average on raw data is “0.7612743823146944” And the preprocessed data for that model is “0.763107932379714”. For MLP, the average accuracy for raw data is “0.5035546875”and for preprocessed data is “0.49677042801556426”. Although accuracy for preprocessed and raw data is unusual considering that MLP is generally more powerful than perceptron, this could be due to the cause of possible issues of early stoppage despite having it implemented. My prediction of MLP accuracies was wrong after conducting my experiments. I proposed that when training and running both models, MLP average accuracy counts would be significantly higher compared to perceptron’s accuracy for both data points. This is because during our training process, we can apply detection prevention of data that does not learn underlying patterns needed for training our data set. But throughout my experiments we tend to see our accuracies of MLP be less accurate, which is occurring in my case. Typically by considering the differences in accuracies between MLP and perceptron in other scenarios we can deduce that the representation of data complexity within MLP has a significant understanding of our trained data to conduct a higher accuracy count, leading to better performance. This improvement in accuracy is a sign of non-linearity within our data, meaning relationships within datasets are accurately captured. On the contrary, the perceptron is represented in a linearity classifier, which hinders performance on complex data types due to building an insufficient model hence less average accuracy performance than MLP.