Bachelor Project - Results log

Timo Wahl (s3812030)

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Replication results

First results

Date: 3-3-2021
Results from forming three multiple layer perceptron classifiers as described in the paper. The first classifier consists of 1 hidden layer with 12 nodes. The second classifier consists of two hidden layers with 24 and 6 nodes respectively. The third classifier consists of three hidden layers with 24, 10 and 3 nodes respectively.

In type A (multiple fail) the classifiers are quite good at getting a good accuracy. The accuracy being close to 92 percent on average. The second and third classifiers perform slightly better at an average accuracy close to 93 percent.
In type B (single fail) the classifiers are still quite good at getting a decent accuracy. The accuracy being close to 85 percent on average. The second and third classifiers perform slightly worse (both 83 percent) when compared to the first classifier (86 percent).

Concluding: The percentages for the classifiers do not mimic the paper, as the percentages in the paper are much higher for type A (99.25, 98.9, 98.75 for classifier 1, 2 and 3) and lower for type (72.25, 76.67, 74.33 for classifier 1,2,3 in the paper). It is interesting to see that, like in the paper, the accuracy percentages do drop when comparing type A to type B. However, as the percentages do not directly mimic the paper, questions remain as to why that is and how that can be fixed. The results are also not very stable, as they are only recording over 600 data points (4 way split over 2400), therefore a loop over 2400 data points is likely a better option to get more stable results.

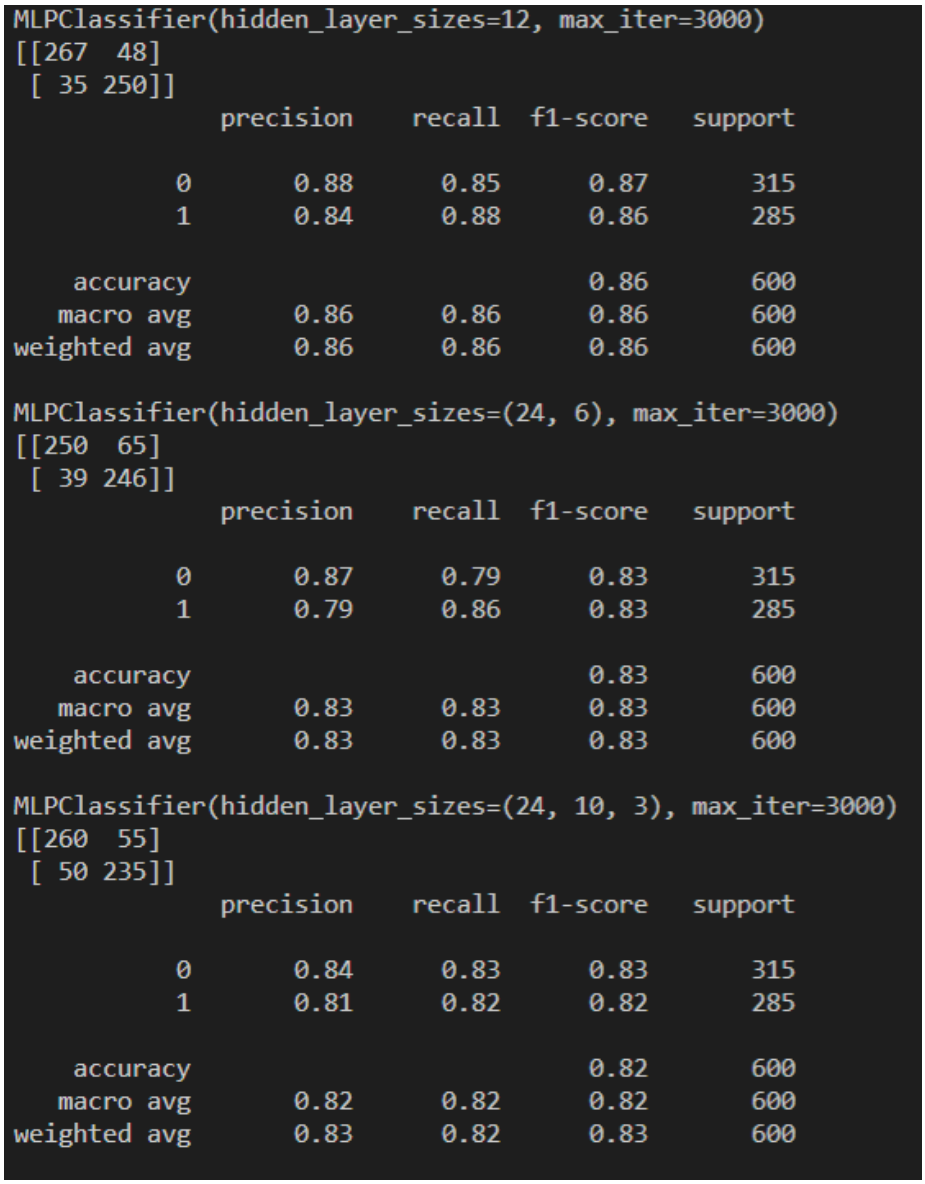

Figure 1: Example results for 3-3-2021 for the type A condition. From the figure the confusion matrix, and classification report for each of the three classifiers are visible.

Second results