NEURO NETWORKS GROUP 6

The following shows a table obtained after running the perception model on our dataset. We obtained various performance measures to assess how regularisation of parameters affect the performance of the model. We also used the best performing parameters to perform the model with varying sizes of test and train splits.

We also ran artificial neuro networks ANN model using TensorFlow on python.

Multi-Layer perceptron	Accuracy	TP	FP	TN	FN	Sensitivity	Specificity	Precision	Recall	Area Under AOC Curve
Architecture 1{max_iter =1000, tol=1e-3, random state = 42}	0.638	17	20	28	6	0.459	0.824	0.583	0.62	0.78
Architecture 1{max_iter =100, tol=1e-3, random state = 42}	0.638	17	20	28	6	0.459	0.824	0.583	0.62	0.78
Architecture 1{max_iter =10000, tol=0.0001, random state = 0}	0.468	17	20	16	18	0.4594	0.471	0.444	0.47	0.43

CONCLUSION

From the table above it is clear that the model performs better under the first two architectures. We experimented with various parameters ran the algorithm multiple times changing each parameter and adding more parameters from the perceptron documentation. The random state set at 42 and maximum iteration set as high as possible ensures that our gradient decent of the neuro network converges fully to error minimising parameters.