# Results from experiments with dataset

The features dataset was tested with multiple algorithms the following table and chart depicts the results of comparison:

|  |  |  |
| --- | --- | --- |
| Algorithm | Accuracy | SD |
| LR | 0.625574 | 0.399225 |
| LDA | 0.627869 | 0.385338 |
| KNN | 0.598033 | 0.2544 |
| CART | 0.568525 | 0.143988 |
| NB | 0.637705 | 0.332884 |
| SVM | 0.668197 | 0.444058 |
| LVQ | 0.70426 | 0.215386519 |
| LVQ2 | 0.673114754 | 0.028710114 |
| BackPropagation | 0.712 | 0.006955149 |

Tuning hyper parameters:

From our comparision, Backpropagation algorithm had the best results, i.e. larger accuracy and less Standard deviation of errors. It shows that backpropagation algorithm provides better results with meager mean square error during testing. To find the best parameters we tested with multiple learning rates in a loop; following are the results:

|  |  |
| --- | --- |
| Backpropagation accuracy results |  |
| Learning Rate | Accuracy |
| 0.2 | 0.00713 |
| 0.3 | 0.00709 |
| 0.4 | 0.00711 |
| 0.5 | 0.00702 |
| 0.6 | 0.00671 |
| 0.7 | 0.00679 |
| 0.8 | 0.00705 |
| 0.9 | 0.00701 |
| 1 | 0.00697 |