



MLP for classify IRIS dataset

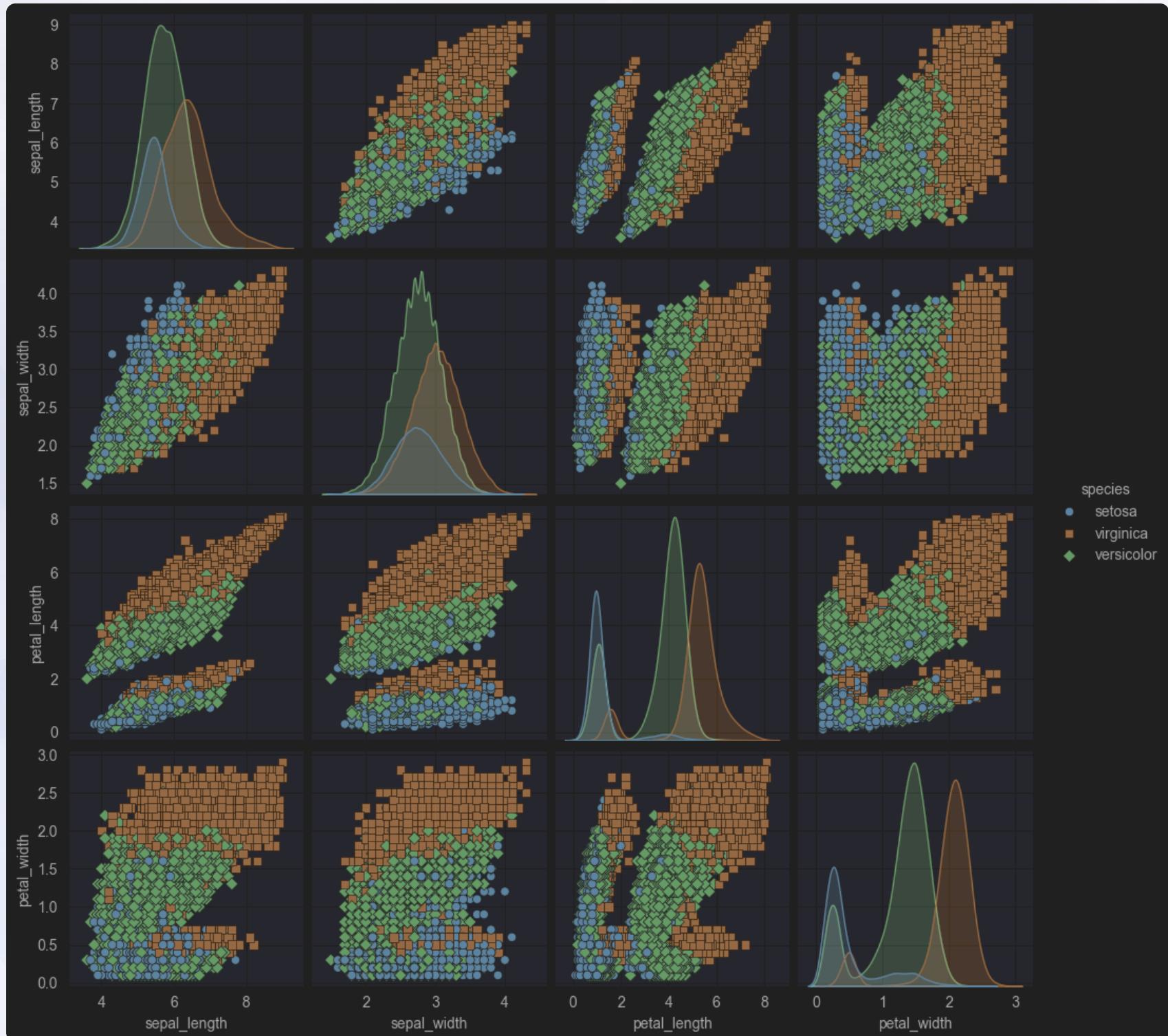
Professor R. Ghaderi

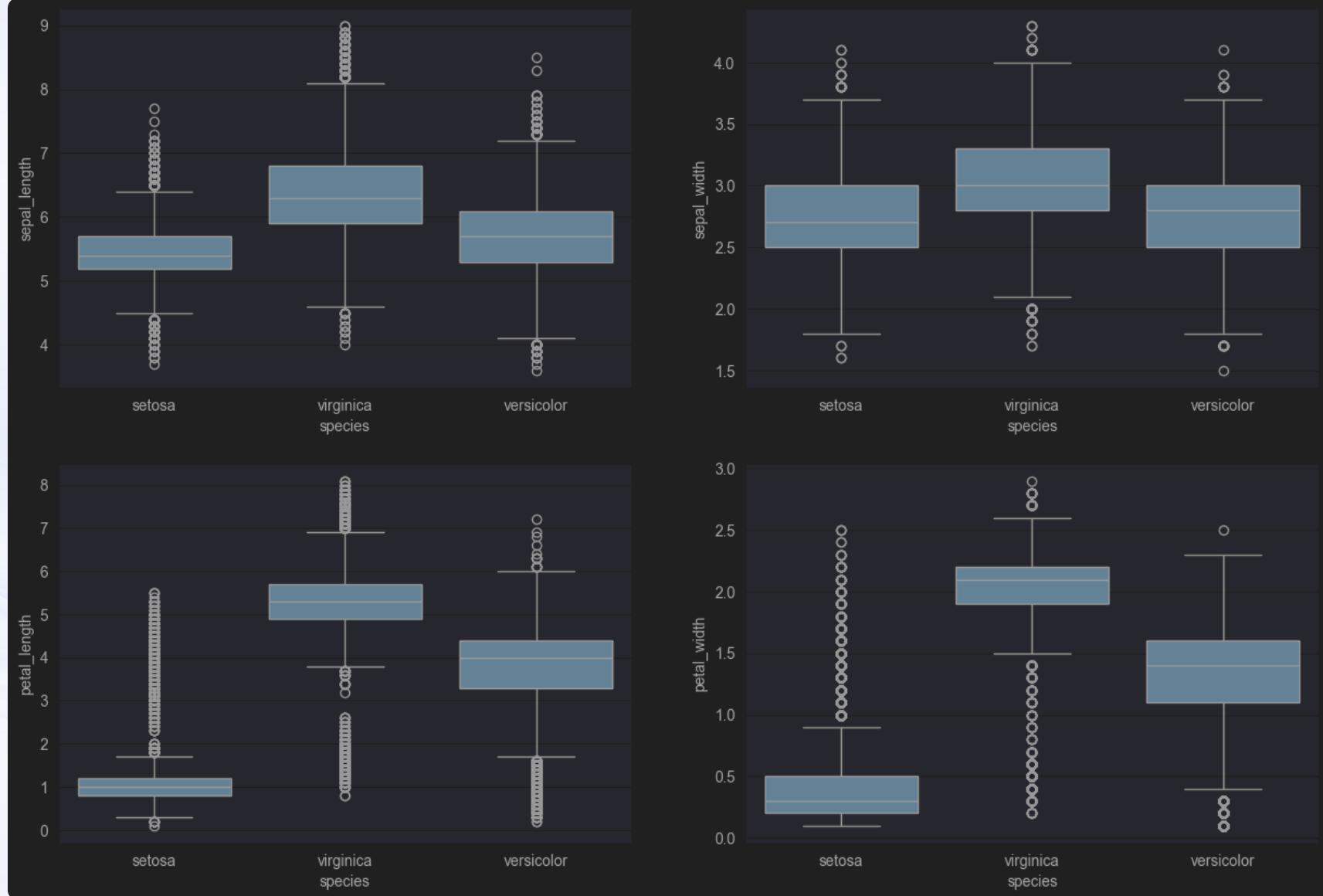
Seyed Mohammad Sajadi

Data review

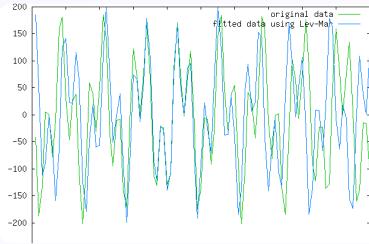
	sepal_length	sepal_width	petal_length	petal_width	species	
0	6.3		2.7	1.4	0.3	setosa
1	6.5		2.7	1.9	1.9	virginica
2	5.9		3.6	1.1	0.3	setosa
3	5.4		2.6	1.1	1.4	versicolor
4	6.5		3.2	1.4	1.8	versicolor

	sepal_length	sepal_width	petal_length	petal_width	
count	49736.000000	49736.000000	49736.000000	49736.000000	49736.000000
mean	5.918906	2.848186	3.717969	1.380107	
std	0.694449	0.360276	1.804229	0.687765	
min	3.600000	1.500000	0.100000	0.100000	
25%	5.400000	2.600000	1.500000	0.900000	
50%	5.900000	2.800000	4.300000	1.500000	
75%	6.300000	3.100000	5.100000	1.900000	
max	9.000000	4.300000	8.100000	2.900000	

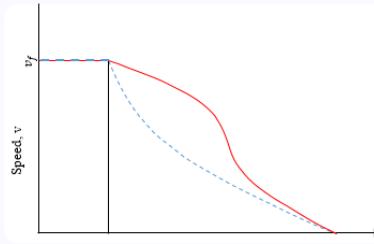




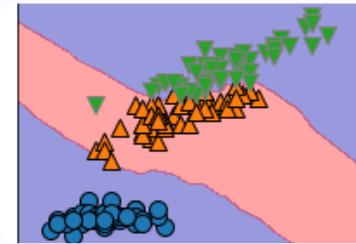
Training methods for iris dataset



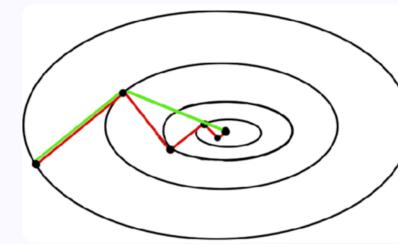
Levenberg
Marquardt



Speed Density
Backpropagation



K-Neighbors
Classifier



Powell-Beale-CG

Levenberg Marquardt

Number of iterations

5 (For specific accuracy 17)

Accuracy

0.9667



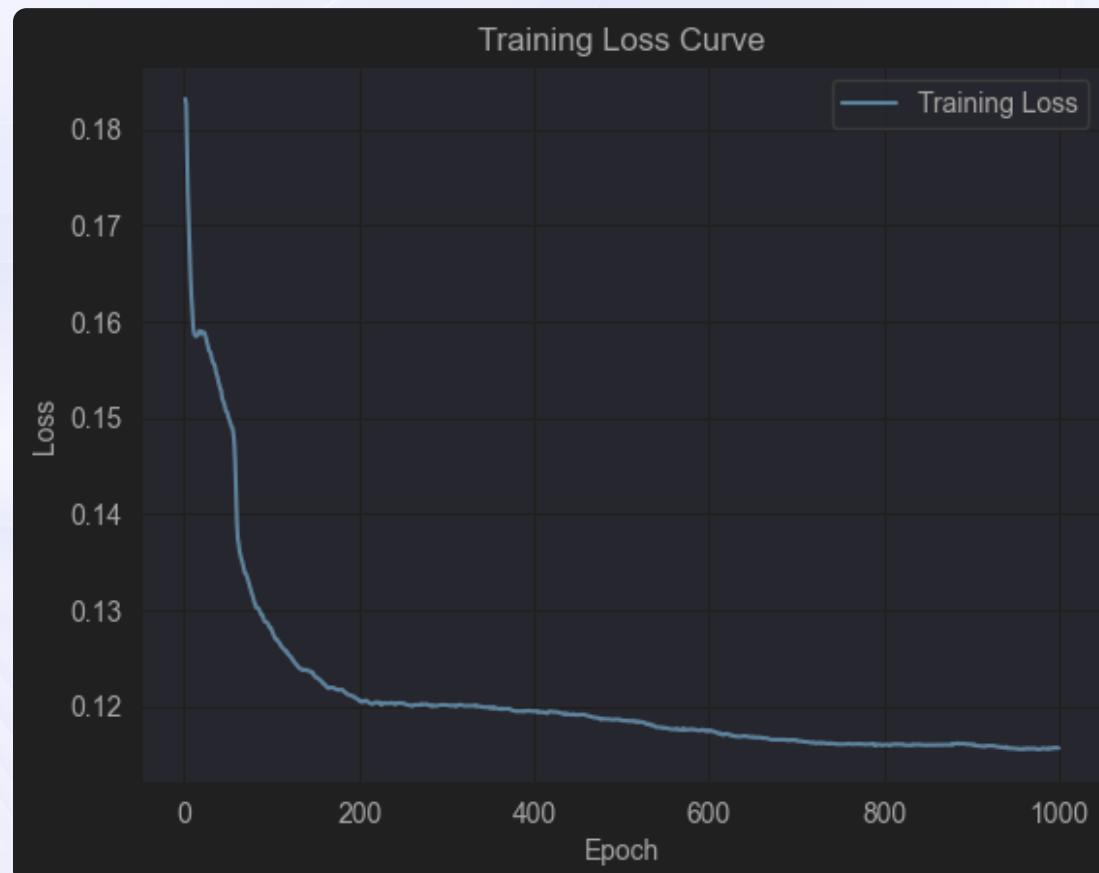
Speed Density Backpropagation

Number of iterations

1000

Accuracy

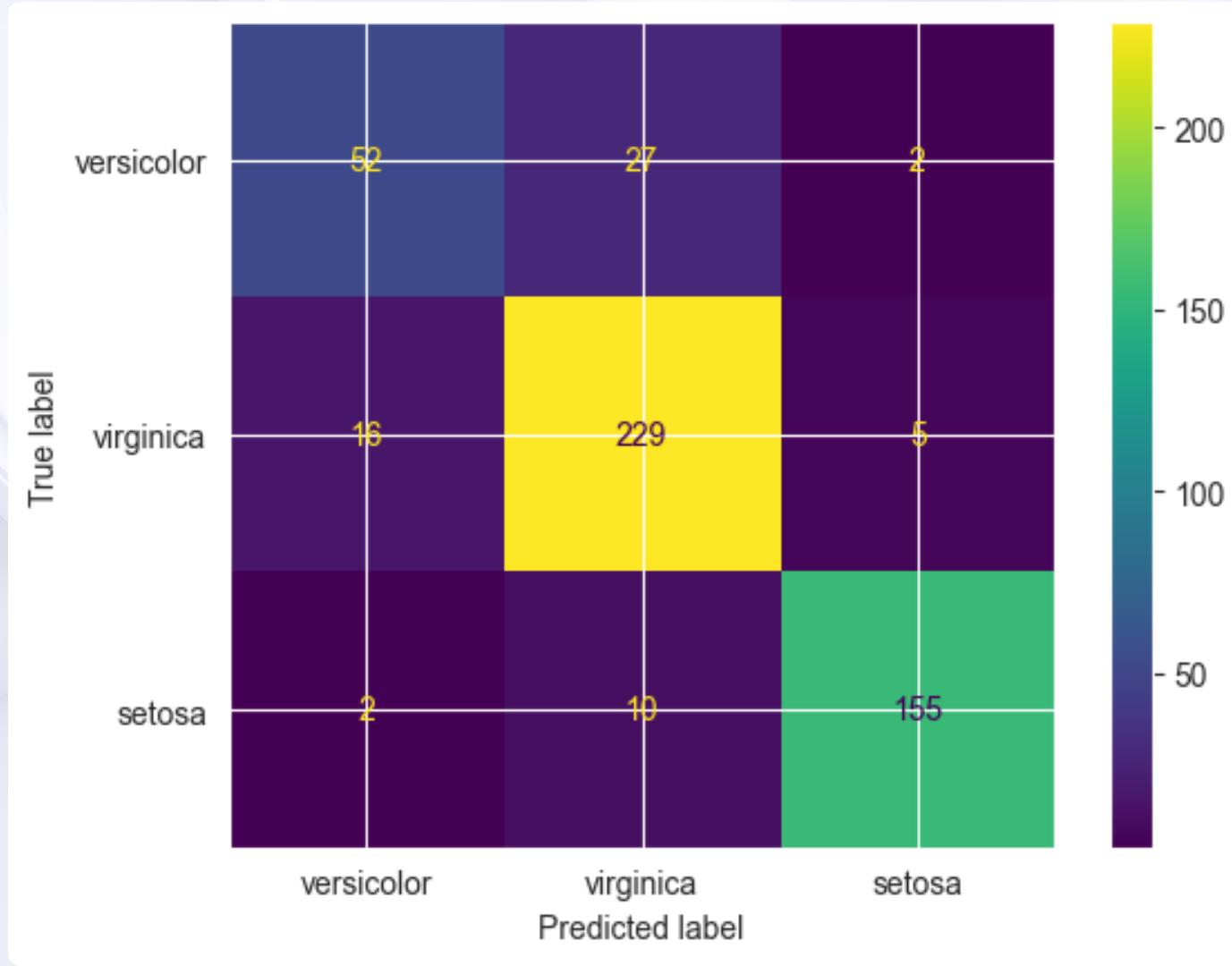
0.8798



K-Neighbors Classifier

Number of iterations	700
Accuracy	0.8795
Input Layer	4
Hidden Layer	5
Output Layer	3
Learning Rate	0.005
Activation Function	sigmoid

K-Neighbors Classifier



K-Neighbors Classifier



	precision	recall	f1-score
setosa	0.73	0.65	0.69
versicolor	0.87	0.92	0.89
virginica	0.96	0.93	0.95
accuracy			0.88
macro avg	0.85	0.83	0.84
weighted avg	0.88	0.88	0.88

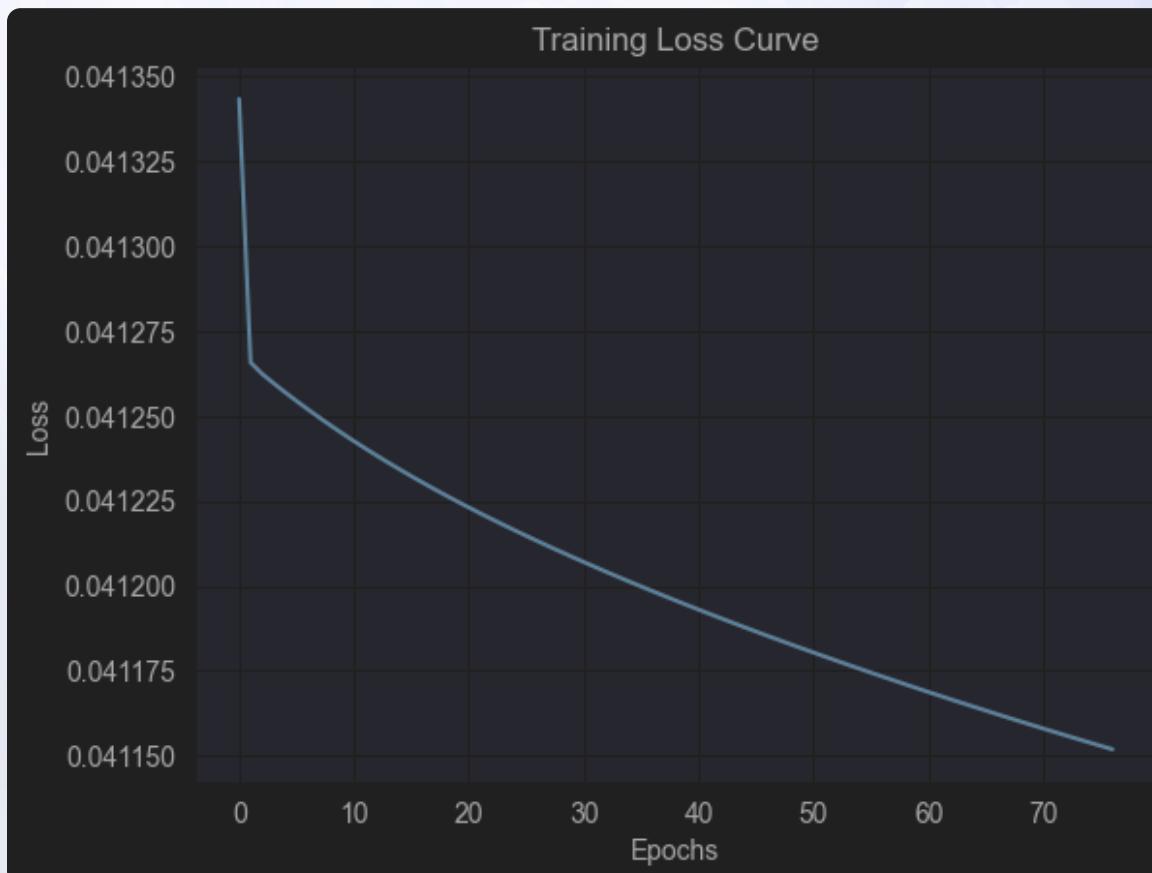
Powell-Beale-CG

Number of iterations

76

Accuracy

0.8267



Summarize the results of neural networks

- 1 Levenberg Marquardt
Number of iterations : 17
Accuracy : 96.67 %
- 2 Speed Density Backpropagation
Number of iterations : 1000
Accuracy : 87.98 %
- 3 K-Neighbors Classifier
Number of iterations : 700
Accuracy : 87.95 %
- 4 Powell-Beale-CG
Number of iterations : 76
Accuracy : 82.67 %



Thank for your patience