
Breast Cancer Linear Neural Network Online Training

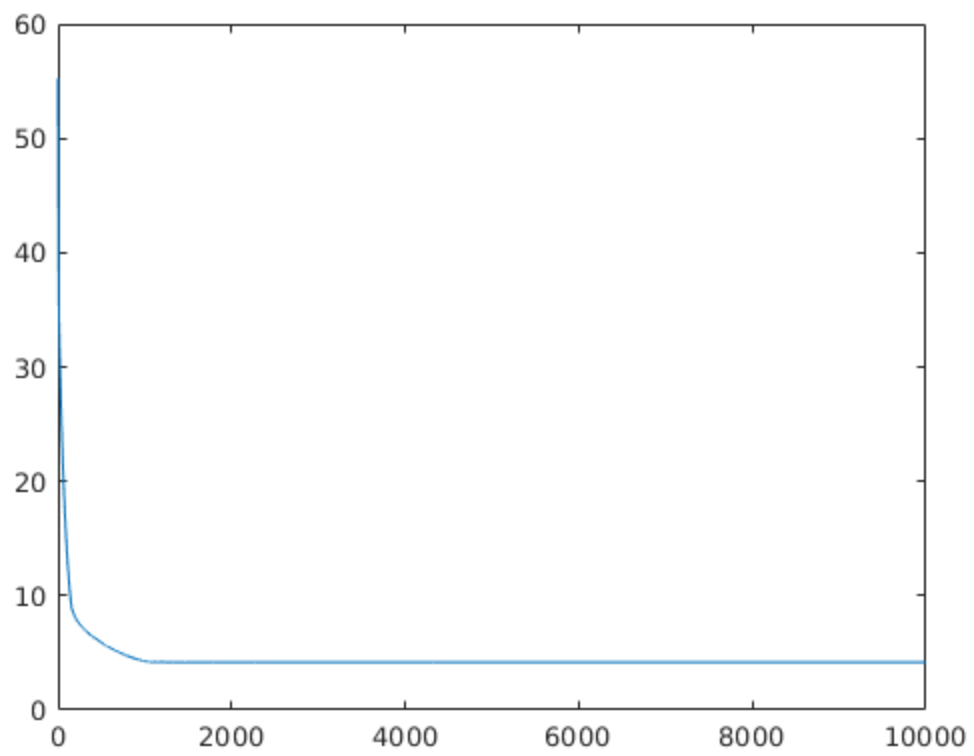
Bryn Louise

```
%Load Data
BreastData
X = double(X)';
%Preprocess data
m = mean(X, 2);
s = std(X,0,2);
Xm = (X -m) ./repmat(s,1,106);

%Set Parameters
alpha = 0.0001;
NumEpochs = 10000;
%Train Data
[W, b, EpochErr] = WidHoff(Xm, T, alpha, NumEpochs);

%Plot Error
NumEVec = [0:NumEpochs-1];
x1 = NumEVec;
y1 = EpochErr;
figure
plot(x1,y1)

%Plot Confusion Matrix
figure
plotconfusion(T, W*Xm + b);
```



Confusion Matrix							
Output Class	1	2	3	4	5	6	
	21 19.8%	3 2.8%	6 5.7%	1 0.9%	0 0.0%	0 0.0%	67.7% 32.3%
	0 0.0%	10 9.4%	7 6.6%	3 2.8%	0 0.0%	0 0.0%	50.0% 50.0%
	0 0.0%	0 0.0%	1 0.9%	0 0.0%	0 0.0%	0 0.0%	100% 0.0%
	0 0.0%	2 1.9%	4 3.8%	12 11.3%	0 0.0%	0 0.0%	66.7% 33.3%
	0 0.0%	0 0.0%	0 0.0%	0 0.0%	12 11.3%	1 0.9%	92.3% 7.7%
	0 0.0%	0 0.0%	0 0.0%	0 0.0%	2 1.9%	21 19.8%	91.3% 8.7%
	100% 0.0%	66.7% 33.3%	5.6% 94.4%	75.0% 25.0%	85.7% 14.3%	95.5% 4.5%	72.6% 27.4%
Target Class							

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