
Homework 5

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Part II: Programming and Questions

1.

Answer:

For the test data set, the follow evaluation values should be:

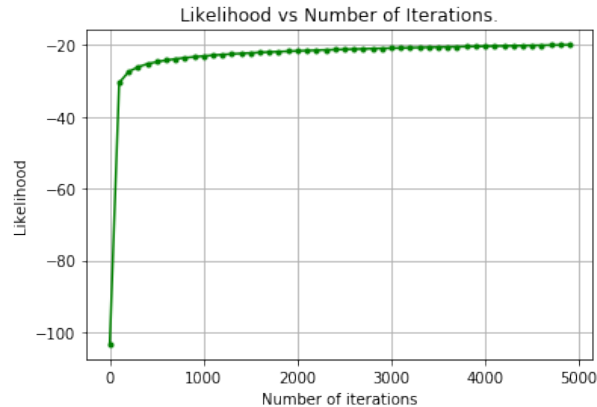
$$precision = 0.98936$$

$$recall = 0.97894$$

$$f1\ score = 0.98412$$

$$confusion\ matrix = \begin{bmatrix} 93 & 1 \\ 2 & 47 \end{bmatrix}$$

The picture should be



2.

Answer:

Firstly, I tried different learning rate – [0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7]. All get the same results for each evaluation value. Then I tried to reduce the iterations of training, in order to prevent overfitting. The results for each evaluation are still the same.

The above experiments results show that the hyperparameters are good enough to get a great prediction result. However, we can still reduce the iterations of training, for decreasing training time.