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My V-Number: V00940711

1 Results and plots:

Training Size	Accuracy
13007	0.994914470642626
11706	0.9944521497919556
9755	0.9930651872399445
6503	0.989828941285252
3251	0.9902912621359223
1300	0.986130374479889

Table 1: Accuracy Table (ProximalGradientDescentOptimizer, l1_regularization_strength = 0.0)

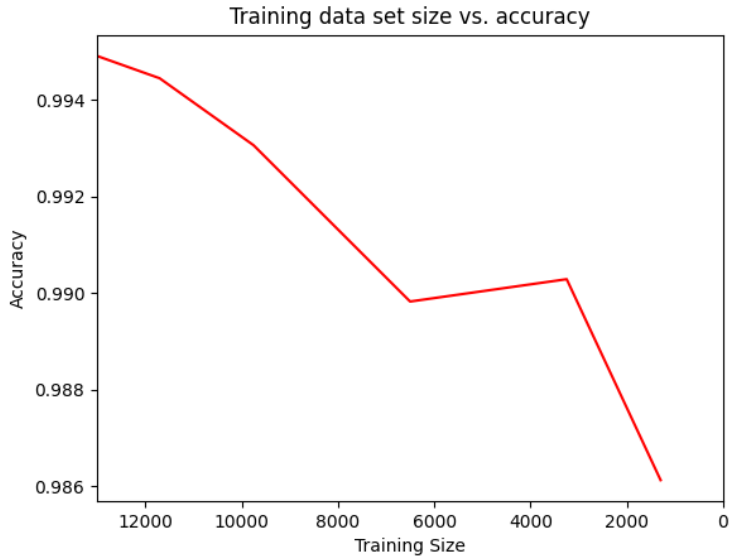

Figure 1: Accuracy graph (ProximalGradientDescentOptimizer, l1_regularization_strength = 0.0)

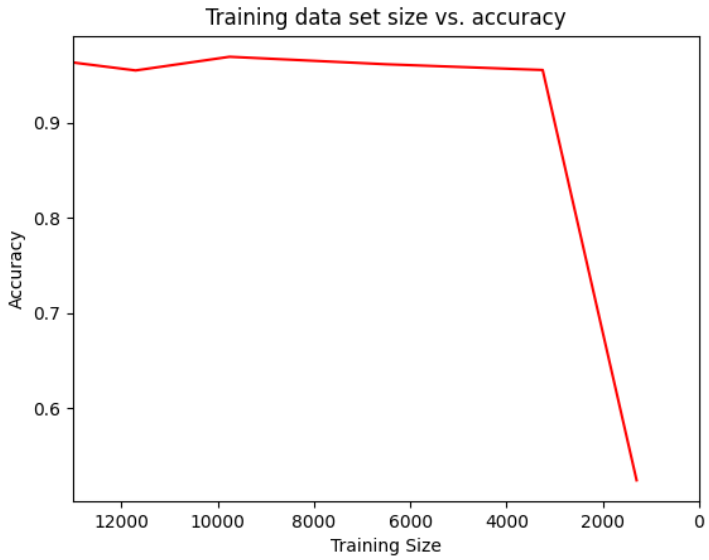

Figure 2: Accuracy graph (ProximalGradientDescentOptimizer, l1_regularization_strength = 1.0)

2 Observations:

- Output for smaller input size such as 1300, 3251, may vary time to time compared to other sample sizes.
- While ProximalGradientDescentOptimizer requires learning rate of 1.0 for getting good predictions, GradientDescentOptimizer can produce good predictions for learning rate such as 1e-3.
- While using ProximalGradientDescentOptimizer, when l1_regularization_strength tends to 0.0, the accuracy increases.

3 Used technologies:

- Keras==2.4.3
- Keras-Preprocessing==1.1.2
- matplotlib==3.3.2
- numpy==1.18.5
- scipy==1.5.3
- tensorboard==2.3.0
- tensorboard-plugin-wit==1.7.0
- tensorflow==2.3.1
- tensorflow-estimator==2.3.0