Deep Learning Project Report on cifar10

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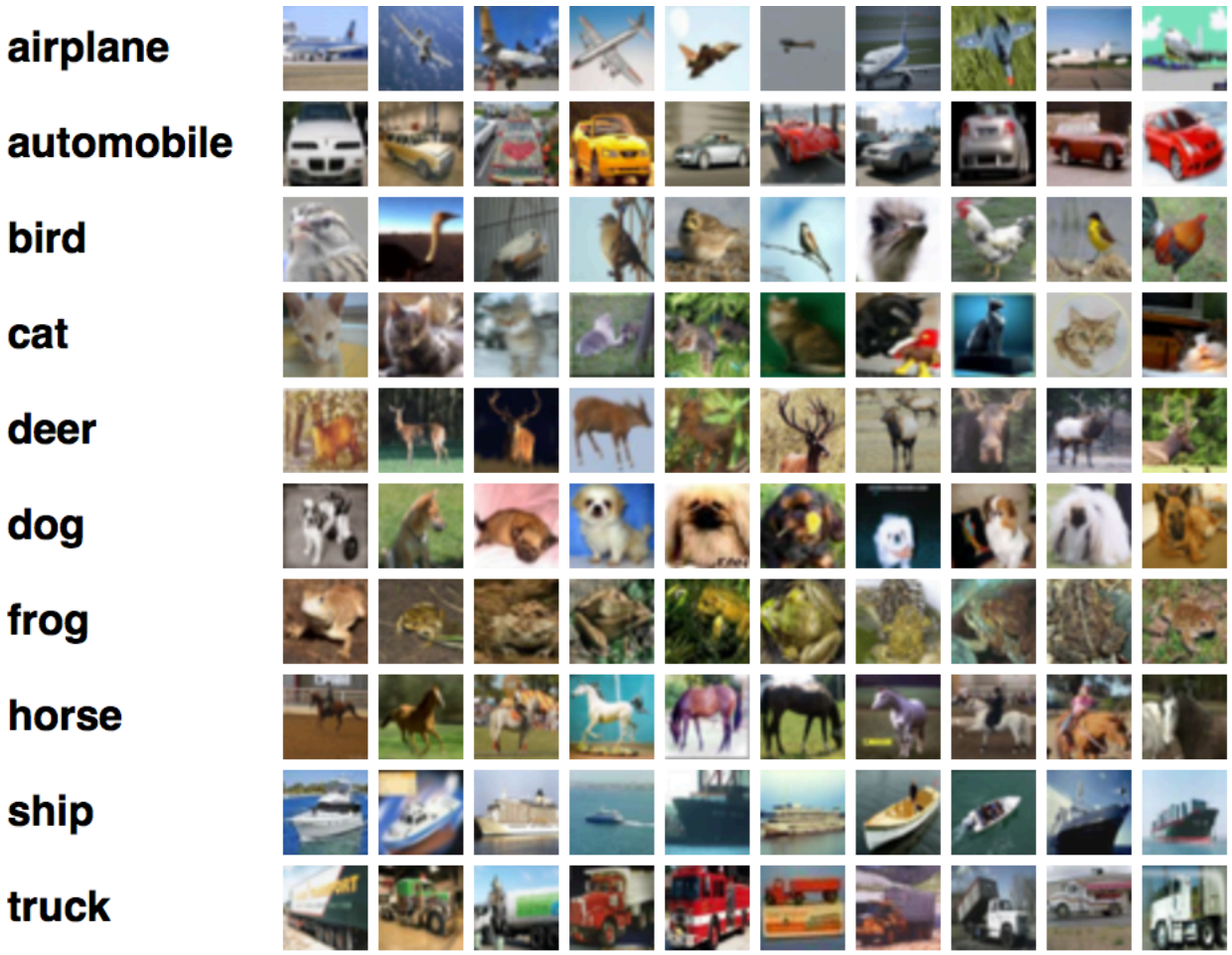
Abstract

In this project, I implemented convolutional neural network to classify cifar10 dataset with tensorflow. I had two convolutional layers; used Ridge and Lasso regularization methods in these layers. Accuracy on testing set is around %70.

1. DATASET INFORMATION

The dataset consists of 60000 32*32 colorful images that are 50000 training and 10000 testing.



2. Ridge and Lasso regularization

Regularization is used for preventing overfitting problem in machine learning. Overfitting can be expected if the accuracy on training data is high but it is low for training and validation. The reason for overffitting is, when there are many variables for dataset , neural network trains too well for training set but as a result it performs poorly in future datas because it can’t generalize well. Ridge and Lasso regularizations are used to get good fit with data. They are also called L1 and L2.

Lasso is using sum of the weights and Ridge is using sum of the square of the weights.

WeTransfer link:

https://we.tl/sGOa6XhGCF