AI5213/EC4213/ET5402/CT5303/FE5402: Machine learning and deep learning Spring 2021

Report for CA2

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Report1 : Describe model your have used (1. architecture overview and 2. any specialty of this model.)

I used the same network with CA1, that is 4 convolution layer and 2 fully connected layer.

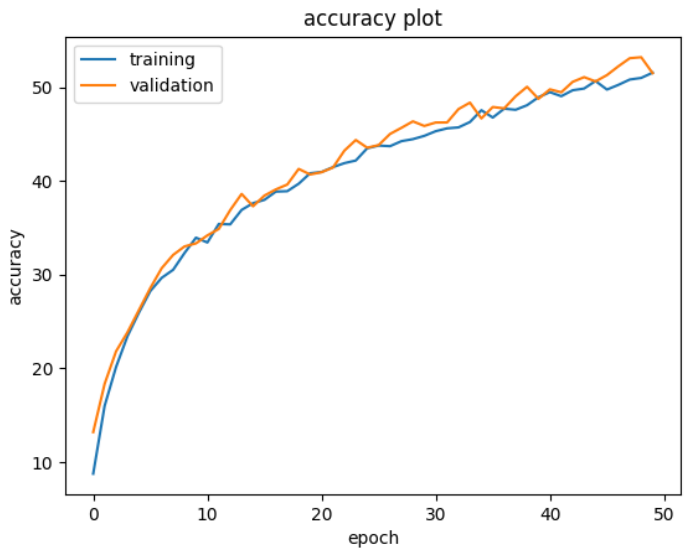
To solve the noisy label problem, I apply three special techniques.

First, I did data preprocessing, To data preprocessing, measure the Perceptual similarity metric of images in each class. Delete the images that are far from the averages score. As a result, it remains not a noisy label.

Second, Doing a data augmentation, To see a another image data, I try to use data augmentation skill in each batch images. For example, flip, Rotation, Normalize, Crop…

Third, Doing cross validation, we want to see whole data and generalize to other unseen data

Report2 : Report both the training and testing accuracy in a plot (x: epoch, y: accuracy).



There is not overfitting problem, because I used 5-fold cross-validation.

But training accuracy & test accuracy didn`t going higher.

I had tried to increase epoch size, accuracy is not dramatically changed

Report3 : Discuss any ideas to improve the accuracy (e.g., new architecture, using new layers, using new loss)

I increase epoch size and train, there didn`t change accuracy.

I think my architecture is too small, so I will increase architecture size.

Doing semi supervised learning, unsupervised learning part is using auto-encoder architecture.

Train images without a label, and then extract latent vector to use by network initialization.