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(1) Convolutional neural networks:
CNNs are faster than DBNs and generate higher accuracy when dealing with images. The process of CNNs identifying images is kind like human identifying objects, which matches the features of images, and with methods like maxpooling, data which need to be computed are scaled down.
Deep belief networks:
Each layer in DBNs learns the entire input, unlike CNNS whose early layers detect simple patterns and later layers combine them. DBNs are able to be trained with less data and is a solution to the vanishing gradient problem.

(2) To build the models, firstly I read the codes and trying to figure out what is the function of each line. Then I tried to make some change based on existing models. The most difficult part is to make my model work. For the CNN model, I extracted data from the pickle file and split the dataset into train and test. But my model kept giving me constant predictions and the accuracy was 33% all the time, because each category account for one third of image library. So, I searched github for solutions, and I found out everyone using CIFAR library normalizes image dataset before putting into the model. So, I normalized the data by dividing 255 and it worked. As for tuning the model, I tried different combinations, because I haven't quit figured out how to calculate the number of filters for each convolutional layer, I got error when adding the third layer to the model. For DBN model, initially it is not working. I debugged two models and realized all of them have only one output and the model does not have a parameter for number of output. So, I converted the matrix label to a single number (1 stands for airplane, 2 dog, 3 boat) and it works.

(3) For CNN model, I used three-layer structure. First layer has three convolutional sub-layers and each of them has 32 filters. The second layer is similar but 64 filters for each convolutional layer. My DBN model has two layers, each of them has 1024 neurons.