CS 4476/6476 Project 4

[name]
[GT email]
[GT username]
[GT ID]

Part 1: SimpleNet

[Insert loss plot for SimpleNet here]

[Insert accuracy plot for SimpleNet here]

Final training accuracy:

Final validation accuracy:

Part 2: SimpleNetFinal

Add each of the following (keeping the changes as you move to the next row):

	Training accuracy	Validation accuracy
SimpleNet		
+ Jittering		
+ Zero-centering & variance-normalization		
+ Dropout regularization		
+ Making network "deep"		
+ Batch normalization		

Part 2: SimpleNetFinal

[Insert loss plot for SimpleNetFinal here]

[Insert accuracy plot for SimpleNetFinal here]

Final training accuracy:

Final validation accuracy:

Part 2: SimpleNetFinal

[Name 10 different possible transformations for data augmentation.]

[What is the desired variance after each layer? Why would that be helpful?]

Part 2: SimpleNetFinal

[What distribution is dropout usually sampled from?]

[What is the effect of batch norm after a conv layer with a bias?]

[How many parameters does your base SimpleNet model have? How many parameters does your SimpleNetFinal model have?]

Part 3: ResNet

[Insert loss plot here]

[Insert accuracy plot here]

Final training accuracy:

Final validation accuracy:

Part 3: ResNet

[Insert visualization of confusion matrix obtained from your final ResNet model.]

Part 3: ResNet

[Insert visualizations of 3 misclassified images from the most misclassified class according to your confusion matrix. Explain why this may have occurred.]

Part 3: ResNet

[What does fine-tuning a network mean?]

[Why do we want to "freeze" the conv layers and some of the linear layers from a pre-trained ResNet? Why can we do this?]

Part 4: Multi-label Scene Attributes

[Insert loss plot here]

[Insert accuracy plot here]

Final training accuracy:

Final validation accuracy:

Part 4: Multi-label Scene Attributes

[Insert visualization of accuracy table obtained from your final MultilabelResNet model.]

Part 4: Multi-label Scene Attributes

[List 3 changes that you made in the network compared to the one in part 3.]

[Is the loss function of the ResNet model from part 3 appropriate for this problem? Why or why not?]

Part 4: Multi-label Scene Attributes

[Explain a problem that one needs to be wary of with multilabel classification. HINT: consider the purpose of visualizing your results with the accuracy table. You might want to do some data exploration here.]