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Regularization Lecture

1. Regularization discourages overly complex models and is a standard technique to simplify models. The models can be simplified by the following techniques mentioned below. Which do you think is the most optimal and best way to reduce complexity?
   a. Do a feature reduction by reducing the amount of data that enter in to the neural network (either reducing the size of the image or find interesting features)
   b. Generate data by Data Augmentation or Adversial Data to help the data insufficiency problem to help in better generalizing
   c. Optimize a regularized loss $J(\Theta;X, y) = J(\Theta;X, y) + \alpha\Omega(\Theta)$, where $J(\Theta;X, y)$ is the standard loss, α is the regularization parameter and $\Omega(\Theta)$ is the regularize and finally update the weights. Or, simply do either one of the following: Parameter norm regularization (L1 or L2), Early stopping, Noise robustness, Weight Sharing, Dropout
   d. I would want to look at different regularization strategies other than the ones mentioned here

Answer: c