

# CS230 Midterm Review Questions

May 2018

1. Regularizing the weights increases the:
  - (a) bias
  - (b) variance
2. Increasing the size of the layers (more hidden units per layer) decreases the:
  - (a) bias
  - (b) variance
3. Using dropout to train a deep neural network increases the:
  - (a) bias
  - (b) variance
4. The Bayes error is a lower bound to Human-level error.
  - (a) True
  - (b) False
5. In which order should you perform these tasks?  
(i) data augmentation, (ii) data split, (iii) data shuffling :
  - (a) i, ii, iii
  - (b) ii, i, iii
  - (c) iii, ii, i
  - (d) i, iii, ii
6. Applying data augmentation is always beneficial.
  - (a) True
  - (b) False
7. Transfer learning related hyperparameters have to be tuned on the training set.
  - (a) True
  - (b) False

8. The space of 12x12 color images is of size:
  - (a)  $256^{(12 \times 12)^3}$
  - (b)  $(12 \times 12 \times 3)^{256}$
  - (c)  $256^{(12 \times 12 \times 3)}$
  - (d)  $((12 \times 12)^3)^{256}$
9. In transfer learning, it is sometimes better to freeze the later layers of a network, and fine-tune only the earlier layers.
  - (a) True
  - (b) False
10. Your dataset is small but similar to the dataset your pretrained model was trained on, you should replace the pretrained model's last layer and:
  - (a) Fine-tune the last few layers
  - (b) Fine-tune the last layer
  - (c) Fine-tune the whole network, including the last added layer.
11. In a GAN, the Generator and the Discriminator are trained simultaneously.
  - (a) True
  - (b) False
12. Stochastic Gradient Descent is a good optimization algorithm to avoid getting stuck in saddle points.
  - (a) True
  - (b) False
13. Using dropout at test time increases consistency and robustness of the model, leading to lower variance.
  - (a) True
  - (b) False
14. By computing the derivative of a neuron's activation with respect to an input image, we can interpret this neuron's influence on the output prediction
  - (a) True
  - (b) False