CS 422/622 Quiz 8 Name Solution

1. What role does gradient descent play in Neural Networks/Deep Learning? (2 points)

   We use gradient descent to update the weights of the neural network.

2. Given a 5×5 input and a 3×3 kernel, what is the size of the output feature map? Assume no padding. Briefly explain. (2 points)

   If you apply a 3x3 kernel to 5x5 input, you will have a 3x3 as your output.
   You lose one pixel on each side of the input which is floor(kernel size/2).

3. List 4 hyperparameters for a deep neural network. (4 points)

   Learning Rate
   Number of Layers
   Number of Hidden Nodes per Layer
   Nonlinearities to apply at each layer/hidden node

4. True/False. Neural networks and deep learning are two terms for the same thing. Briefly explain. (2 points)

   True.

   Deep Learning is simply 3-layers or deeper neural networks.