Quiz 4 (Image Processing)

This is an optional quiz to test your understanding of the material from Week 5.

1. List five different Image Processing tasks.

2. Explain the problem of vanishing and exploding gradients, and how Weight Initialization can help to prevent it.

3. Describe the Batch Normalization algorithm.

4. Explain the concept of Data Augmentation, and how it was used in AlexNet.

5. Explain the difference between a Residual Network and a Dense Network.

6. What is the formula for the $(i, j)^{\text{th}}$ entry G^l_{ij} in the Gram matrix at level l of a convolutional neural network? (remember to define any terms that you use)

7. Explain the difference between Texture Synthesis and Style Transfer (both in their purpose, and their cost function).

Make sure you try answering the Questions yourself, before checking the Sample Answers