Name: _____

Score: /8

CSE 5524 Computer Vision for HCI AU'22

Homework Assignment #7

**** Due: Wednesday 10/19 at 11:59am ****

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1) Download a color image from the web. Run the SLIC superpixel segmentation algorithm provided in Matlab or Python and experiment with the target number of superpixels and compactness. Display and discuss your results. [3 pts]

   Matlab: **[L, NumLabels] = superpixels(img, N, Name, Value)**

   Python: **from skimage.segmentation import slic**

   segments_slic = slic(img, n_segments=250, compactness=10)

2) There's an elephant in the room. Can you find it? Use the "template" **template.png** and search for it in the "search image" **search.png** using color-based NCC (make sure the standard deviation is "unbiased" with N-1). (Note: the template did NOT come from the search image.) Assume the origin is in the center of the template image (Note: there should be a wide border around the search image where the metrics cannot be computed).

   Sort the resulting scores from best to worst. Plot all of the sorted scores (1-D plot) and show the patches corresponding to the 1^{st}, 2^{nd}, 5^{th}, 10^{th}, 100^{th}, and 500^{th} best matches. Compare the results. [5 pts]

3) As usual, submit your material to Carmen.