Homework 5 (SLIC-based Saliency Map)

Obtain SLIC superpixels for the attached image using a pre-defined library function or available online code.

A saliency map is a technique for automatic foreground extraction, focusing on elements that stand out from their surroundings. To generate a superpixel-based saliency map, follow these steps:

1. For each superpixel, compute its color_distance and spatial_distance from all other superpixels. The location of a superpixel is defined by its center, and its color is the average color of the pixels it contains.

2. Calculate the effective distance between superpixels using the formula: (color_distance) * exp(-spatial_distance). Sum the effective distances from all other superpixels to determine the saliency value of a superpixel.

3. Once the saliency values of all the superpixels are computed, assign them to the corresponding pixels.

Finally, apply appropriate image enhancement techniques to create a grayscale saliency map that highlights the bird.