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TEE 461 Image Processing

Project 2 Proposal

For my second project, I would like to create an app that loads and image and displays it for the user to segment desired colors. The app will have two axes one for the original image and one for the segmented image. There will be sliders that allow the user to modify the upper and lower limits for the Hue, Saturation, and Intensity of up to three different color ranges. The sliders will be initially set from 0 to 1, but update the actual possible range based on the user’s selection for the upper and lower limits. This will prevent the user selecting an upper bound that is smaller than a lower bound and vice versa. There will be a reset button to allow the user to reset all the ranges back to defaults and return the segmented image back to the original. There will be toggle color buttons to help the user visualize which color ranges they are setting at that time. When the toggle button is clicked the values will be stored for that color range, and the sliders will reset for the user’s next color range selection. There will be a segment button that will then perform the operation depending on if the user modified one, two, and/or three-color options for Hue, Saturation, and Intensity. It will confirm the number of colors ranges selected by comparing the default values to the new Hue, Saturation, and Intensity values for each color. I will be using AND and OR operations for combining the Hue, Saturation, and Intensity ranges. Any value outside the specified ranges set by the user will be reset to [0.5,0.5,0.5] or gray. After the image is segmented, the user can save the modified image for later use.