IMAGE PROCESSING WORKSHOP QUESTIONNAIRE

CONCEPTS

1. Which is faster? Applying a 2D Gaussian filter or 1D-x Gaussian followed by 1D-y? Which is more accurate? Why?
2. What do you think will be the output of the Canny function if we input a Canny filtered image. (Same threshold values), iteratively? Why?
3. Color Mapping from the RGB Space to the HSV/HSL space is not-bijective/non-invertible. Explain why.
4. Why is the primitive edge-detection method, i.e. (max-min)>threshold not good? What are the shortcomings rectified by Sobel/Prewitt filters?
5. Which is faster BFS/DFS? Are there any advantages of one over another?
6. Is the 3x3 or 5x5 gaussian kernel normalized like the mean/average filter kernel? If no, when is it normalized? What are the necessities of normalizing kernels? Is it required or just prefered?

ALGORITHM DESIGN

1. Will a mode based filter be effective in detecting noise?
2. Formulate a Logic/Algorithm to separate/detect the background in a video for a moving object?
3. Suggest an algorithm to determine the number of faces visible to the camera of a **solved** rubik's cube.
4. How do you extract circles from an image using the hough transform?
5. How do you determine the end-points of a line detected by hough transform?
6. How do you detect shapes without findContours?

INTEREST

Suggest a small real life problem you can solve using IP.