Computer Vision Homework 2 README

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Walkthrough 1 works fine. The generated output is included.

Challenge 1a works fine. I tried normal edge() with no other parameter and edge() with a threshold parameter. Finally, I have used the function with a method and a threshold parameter.

Challenge 1b works fine. I have programmed this part to accept any numbers of bins (for rho and theta) since I coded the min, max, bins for both rho and theta. In this way, the number of bins (rho bins * theta bins) are defined and are used for voting. For voting, the actual value of rho is calculated by using the formula I derived from Written Problem 1. Then, rho is being sorted into its corresponding bin by comparing with close boundary values (which are determined by the range of rho and the bins of rho). After voting, the values are scaled to be within 0-255.

Challenge 1c works OK? I implemented a list to keep track of possible peaks that are over the threshold. If, for example, the next point nearby is close to one of the identified peaks, and its value is higher than the existing one, the older one (with the coordinates of rho and theta) will be changed. I've manually set up error values when searching "nearby" values (and those error values are like the "radius" of the search area). I tested a huge amount of threshold values and the current ones are working especially well for the 2nd graph, works pretty good for the 1st graph, and works OK for the 3rd graph (because there is not enough vertical lines identified and there will be too many noises when vertical lines are identified).

I used code from demoMATLABTricksFun.m and included the function saveAnnotatedImg().

All files, original or generated, are included in the zip file.