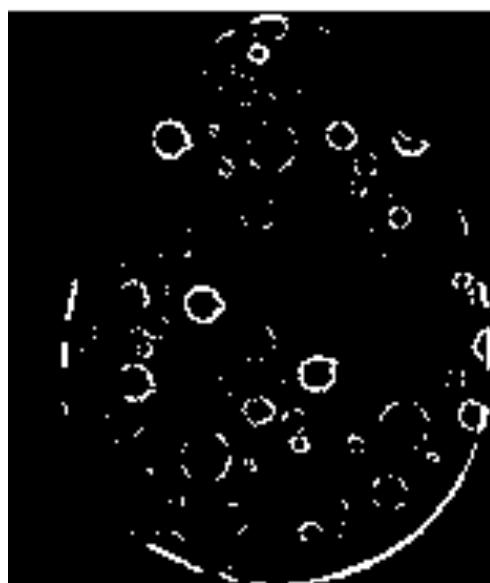
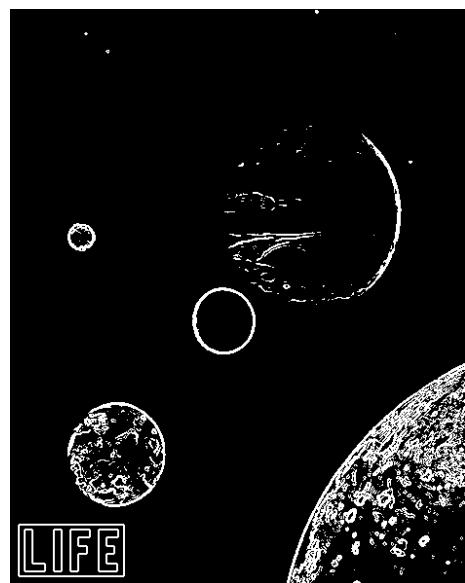


```
function [edges] = detectEdges(im, threshold)
```



100

15

115

LIFE

35

55

9

8

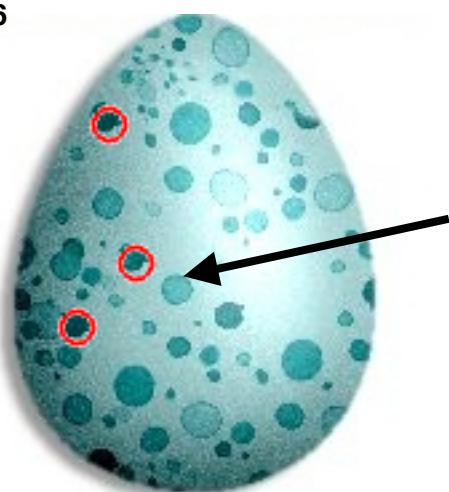
LIFE

LIFE

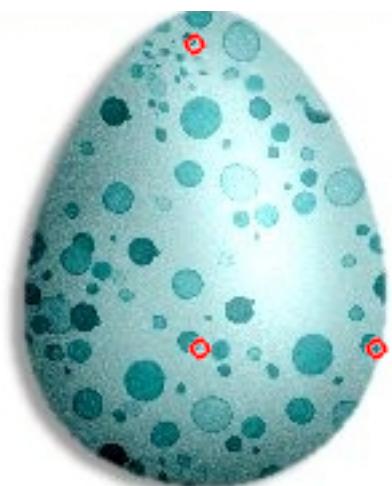
42

6

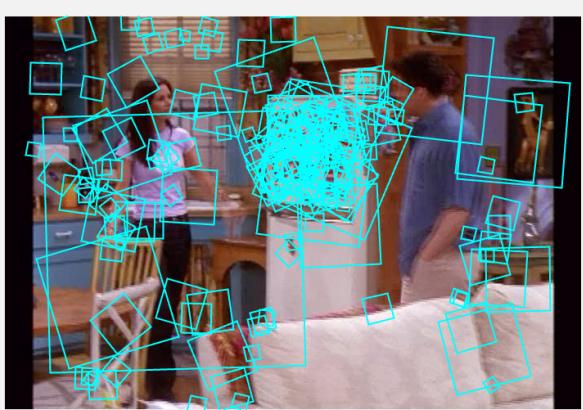
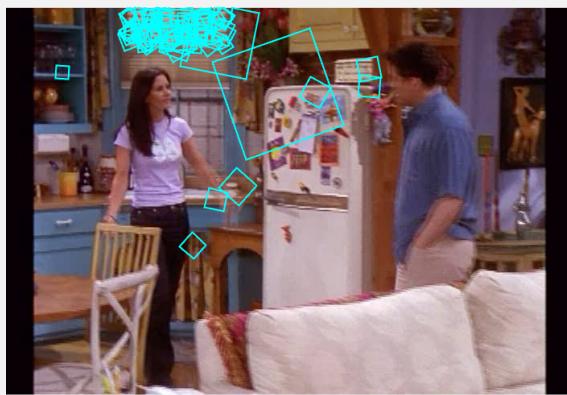
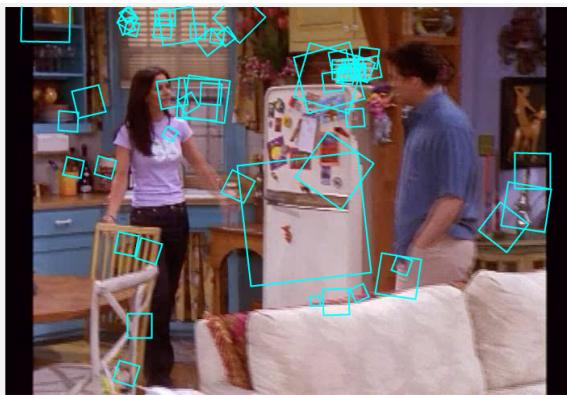
3



Here is an example of the effect of quantization on hough circle detection. The hough does a decent job at gathering which parts of the image represent circles of radius 6. However, due to quantization, the centers of the circles are visibly skewed from the actual center.



rawDescriptorMatches.m



visualizeVocabulary.m

Here are two example outputs from `visualizeVocabulary`. They represent the two most different visual words taken from a sample of 1500 words gathered from 300 randomly chosen frames.

The top images seem to be capturing a vertical, sharply defined edges. It is capturing buildings, people's faces, and pieces of paper.

The second visual word seems to be much more varied, and it isn't readily apparent exactly what feature is specific to these patches in common. That being said, many of the frames represent people's faces. Patches that aren't human faces are generally curved and vaguely elliptical in appearance.



fullFrameQueries.m

- Below are the query images and results for my full frame queries.
- The first of the two queries results seem to be highly successful: the images returned are nearly identical to the query image and the characters and much of the scenery is extremely similar. The last of the query examples is slightly less successful: while some of the retrieved frames seem to match, it is non-obvious why others appear. I suspect that the diminished success off the third query image is due to a lack of frames similar to the one chosen.

1



2



3



regionQueries.m

In general, the region select function worked very well. Of the four regions that I tested, all but one of them recognized the desired object perfectly in the three other provided frames. The exception to this rule is the third region selected of the woman wearing the plaid shirt: it finds one frame that contains the same shirt, but the other frames are a little less sensical and don't obviously match for any apparent reason.

The example shown on the bottom does a good job at representing how the patch can pick similar object out of different scenes. A patch containing two light fixtures have been picked out from various frames shot from different perspectives, and containing different characters.

