

Homework #3: Audio Processing

Design a Windows Phone to fulfill the following specifications. Submit a .zip file of all contents of your repository to the class dropbox. To reduce upload time, be sure to “clean” your visual studio project before zipping.

Your windows phone application will perform realtime image processing to analyze an input image, detect red rectangles, and overlay an image on top of the center of any red rectangles that are found. Note that solutions limiting themselves to a finite number of rectangles found are acceptable, however it is prefferable that the number of rectangles found is easily varied, for maximum generality. Recognizing red rectangles regardless of orientation, size, and slight discoloration (within reason on all counts) is desirable. Performing recognition and overlay efficiently and without undue lag/framerate degradation is also desireable. An example image processing class is provided with the Homework template, use this as a basis to create your own C++ image processing class that you can insert between the camera and the texture graph.

Because we must use the Windows Phone 8.1 Silverlight application template, some new APIs we have used in class so far will be unavailable to us. If you’d like to use raw camera input in a final project that uses something that is unavailable in the 8.1 Silverlight application model, please come talk to me.

In the unlikely event that you cannot find a red rectangle image, the University of Washington is pleased to provide you three free of charge at the bottom of this handout.

