CSI 4133

Lab 2

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Methodology

To make the code as flexible as possible, a base function, *detectMotion*, was created that accpets one argument, a string containing either “car” or “park” (all other strings result in message to print informing the user their input is invalid). Based on the argument provided, the desired pair of images is loaded, and the *display* function is called. The *display* function creates a window with a trackbar, assigns the base and maximum values for the trackbar, and dictates the function to execute when the trackbar is used, namely *onTrackbar*. The *onTrackbar* function accepts one parameter, the value of the trackbar, and passes this to the *getDiff* function, which returns the difference between the images using the trackbar value as a parameter. After the difference is calculated, the display is updated with the image using the new threshold.

Results

Park

After some experimentation, a threshold of approximately 31 resulted in an accurate detection of motion. As pictured in figure 1, a threshold of 9 includes too much irrelevant information, and a threshold of 110 ignores too much relevant information.

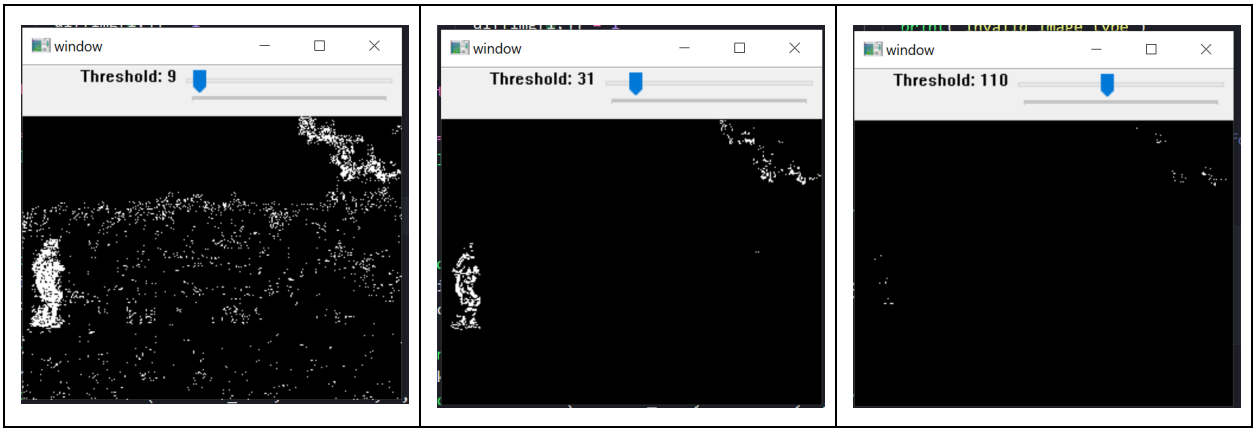

Figure 1

Car

After some experimentation, a threshold of approximately 28 resulted in an accurate detection of motion. As pictured in figure 2, a threshold of 5 includes too much irrelevant information, and a threshold of 142 ignores too much relevant information.

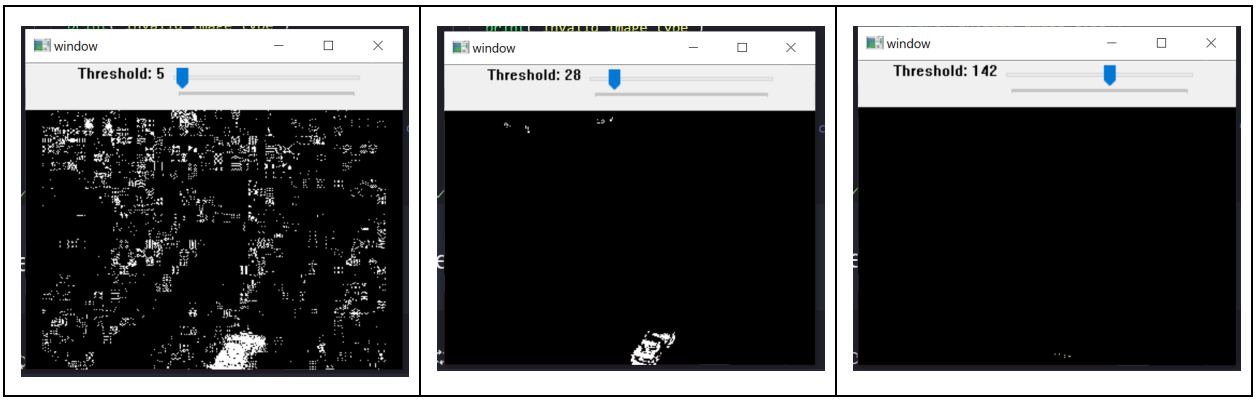

Figure 2