Project #5

assign December 14, 2020 due December 19, 2020

Consider the gray-scale image**, Car on Mountain Road.tif** below, (a) apply the **Marr-Hildreth** edge detection algorithm to obtain the edge image. Plot all the images generated during the entire step-by-step procedure of applying the algorithm. Assume two thresholds: 0% and 4% the maximum gray level of the LoG image (refer to Example 10.7 and Figure 10.22). (b) **Edge linking by Hough transform**: based on the edge map obtained in (a) using 4% max{Log} as the threshold, use the Hough transform to perform *edge linking*. Firstly, determine the Hough parameter space using 1° increments for θ and 1-pixel increments for ρ. Make the same plot as Figure 10.31(c) (Example 10.12). From your results of Hough parameter space, determine *the possible cells for the license plate* to make the same plots as Figures 10.31(d) and (e).

Your report (Word or pdf format) should contain:

- Source codes (30%)
- Figures of the LoG image (10%), binary images by zero-crossings with threshold of 0 and 4% of max(LoG) (30%)
- Figure of *Hough parameter space*, refer to Fig 10.31(c) (15%)
- Figures of linked edges alone and overlapped on the original image, refer to Fig 10.31(d),(e) (15%)

Note: Images must be plotted with good resolution.

Upload your report to new e3 before due time!