

CS663 Assignment 2

Saksham Rathi, Kavya Gupta, Shravan Srinivasa Raghavan

September 2024

Contents

Question 8	3
-------------------	----------

Question 8

The results of doing local and global histogram equalisation is as follows:

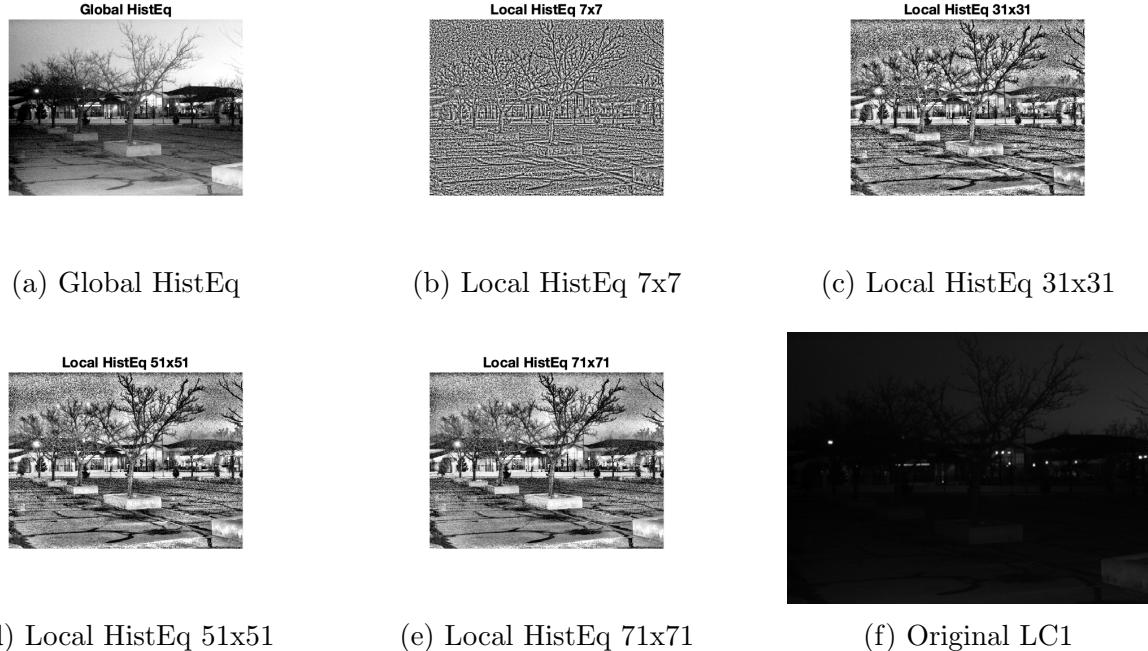


Figure 1: Results for LC1.png

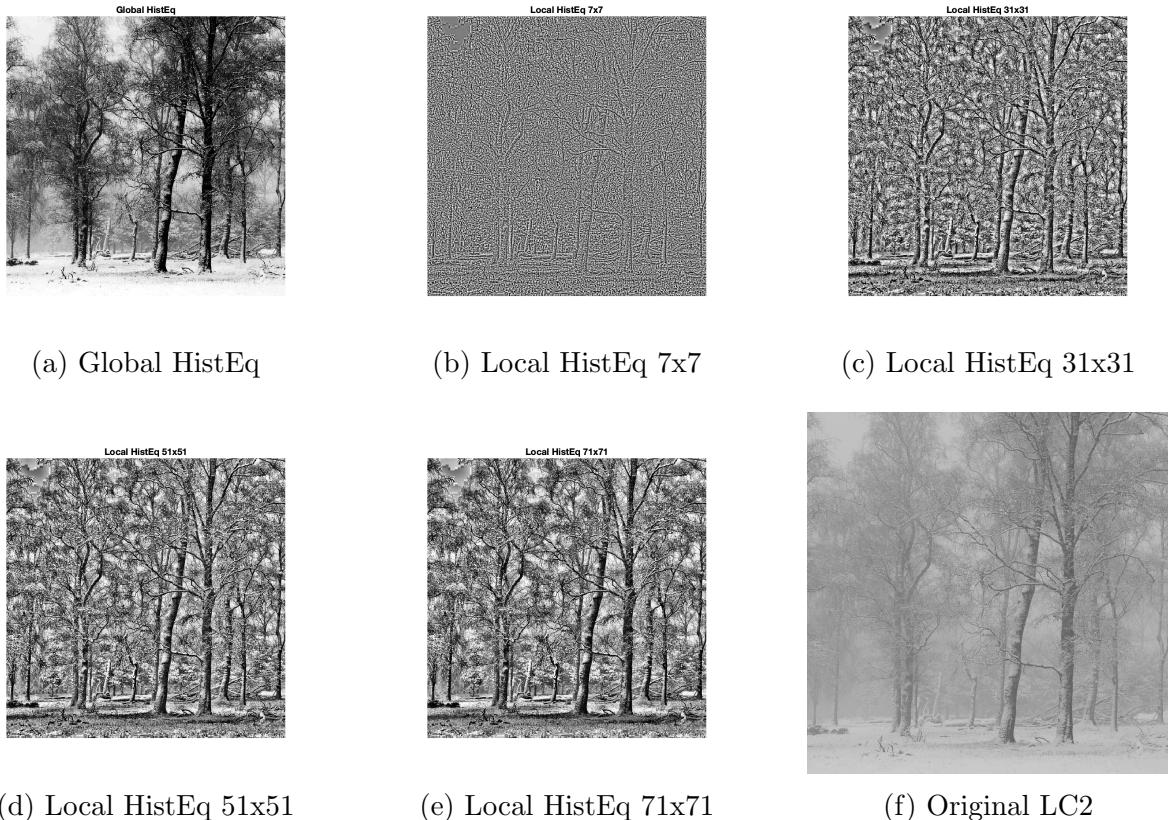


Figure 2: Results for LC2.png

Upon comparing the global and local histogram equalisation for LC1 the patches outlined in the red boxes were found to have **better contrast** in the local method than in the global method:

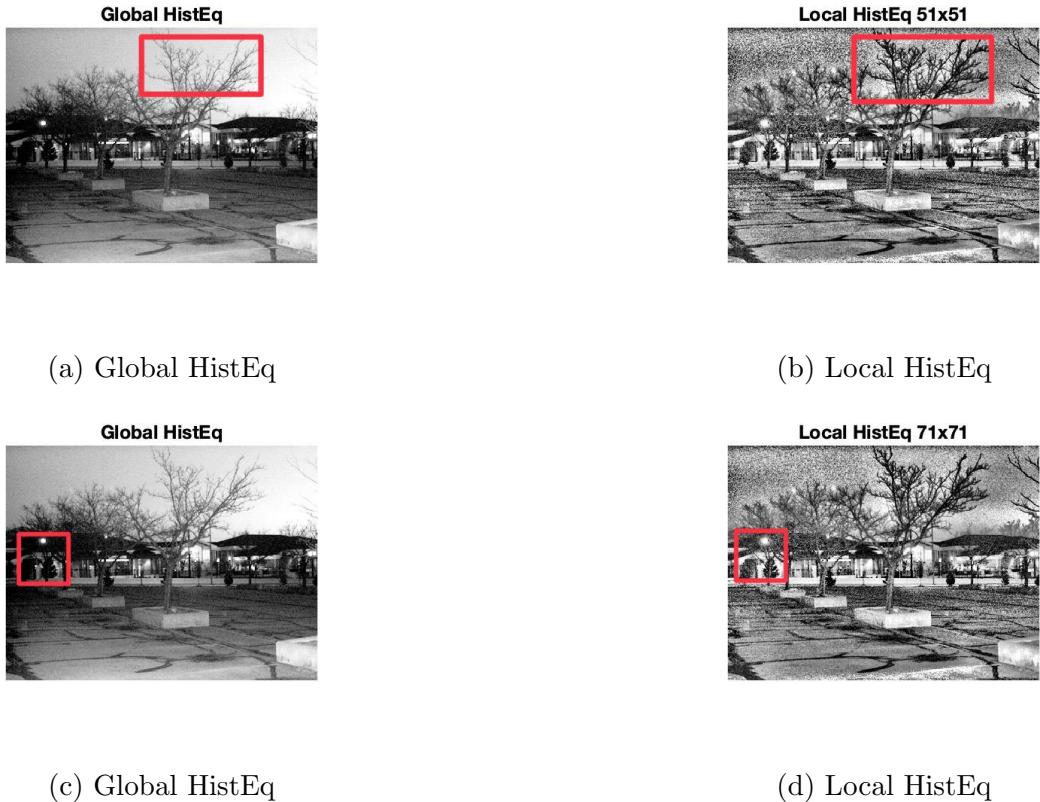


Figure 3: Contrasts for LC1.png

Similar results were obtained for the image LC2:

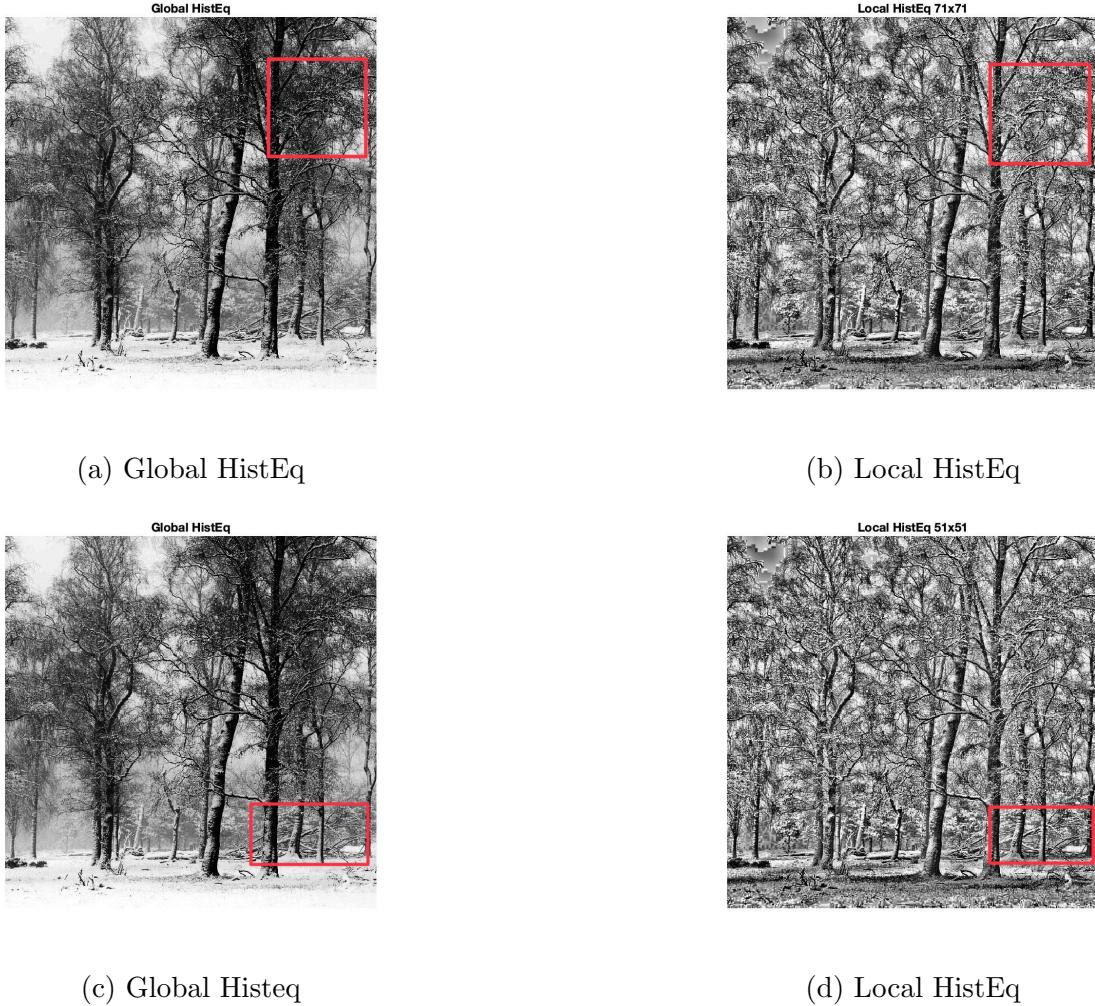


Figure 4: Contrasts for LC2.jpg

Explanation

Histogram equalisation uses all the pixels that are available to get better contrast. If only a small window were used as in the case of 7×7 local histogram method, the data is too less and the contrast is poor. So going by this argument, we must be getting the best results from using the entire image. This is not so because some regions of the image have nothing to do with the other and have no influence on the intensities of each other's pixels. Finding a big enough window for local histogram equalisation gives the best results. On average the 51×51 and 71×71 windows seem to work better than the global method.

1. For LC1, the regions where the buildings are shadowed by trees is contrasted very well in the local method.
2. For LC2, the branches at the top of tall trees and the logs on the ground are well contrasted in the local method.

In both cases we are looking at the windows of sizes 51×51 and 71×71 .