CS 663 - Fundamentals of Digital Image Processing
Assignment 05

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Solution 3

Original image

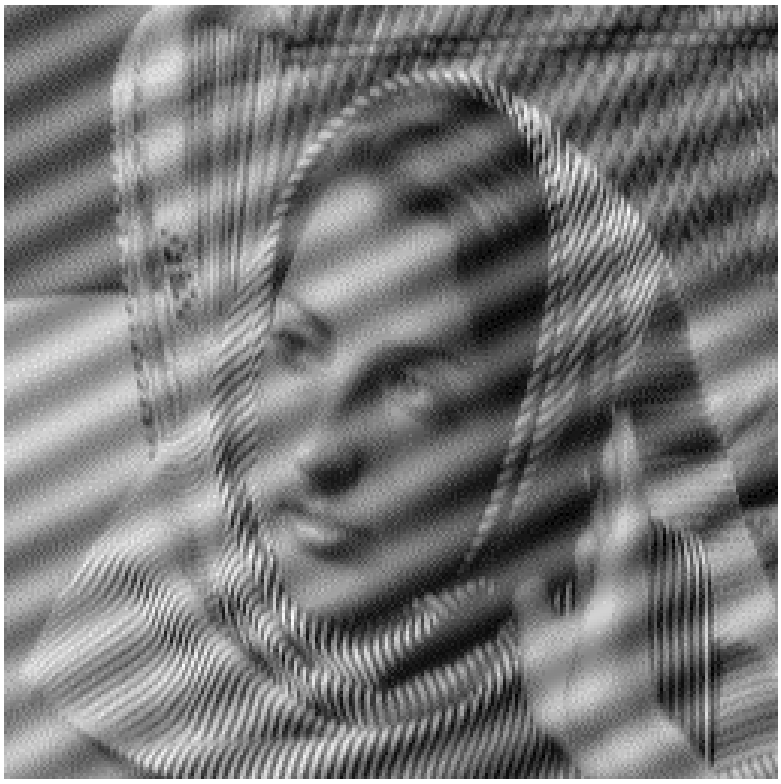

Figure 1: Original Image

Log Fourier Magnitude

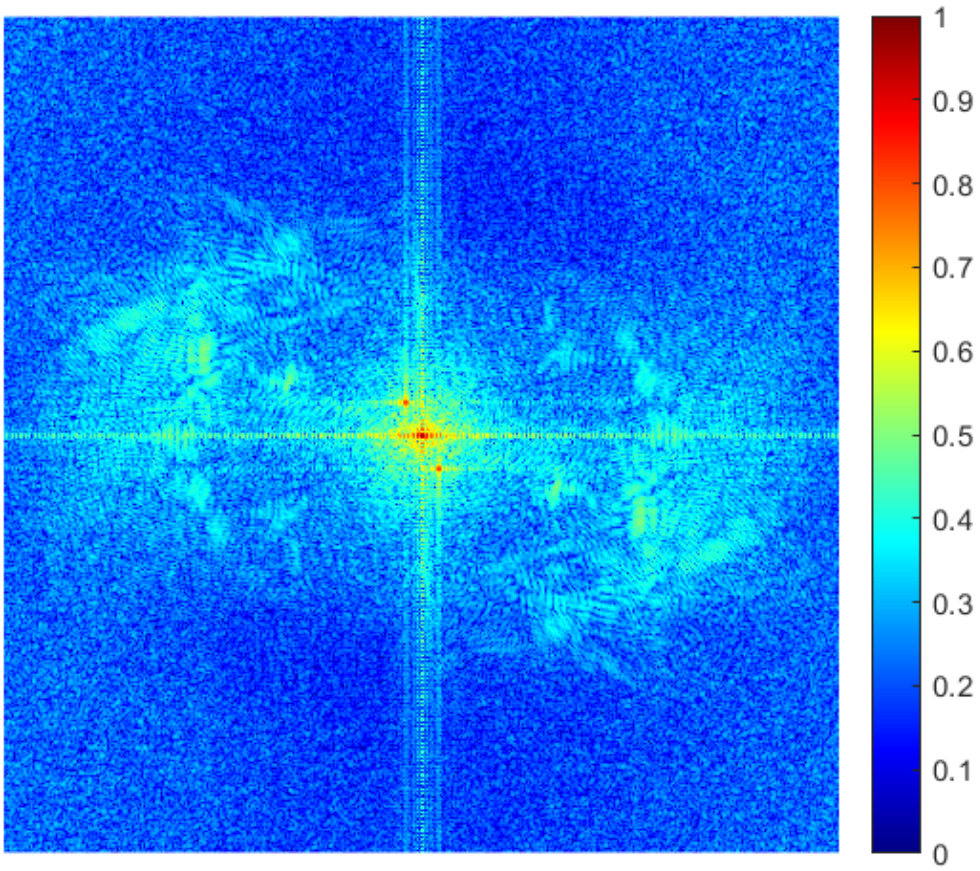

Figure 2: Original Image - Log of Fourier Plot (Padded Image)

Log Fourier Magnitude of Filtered Image

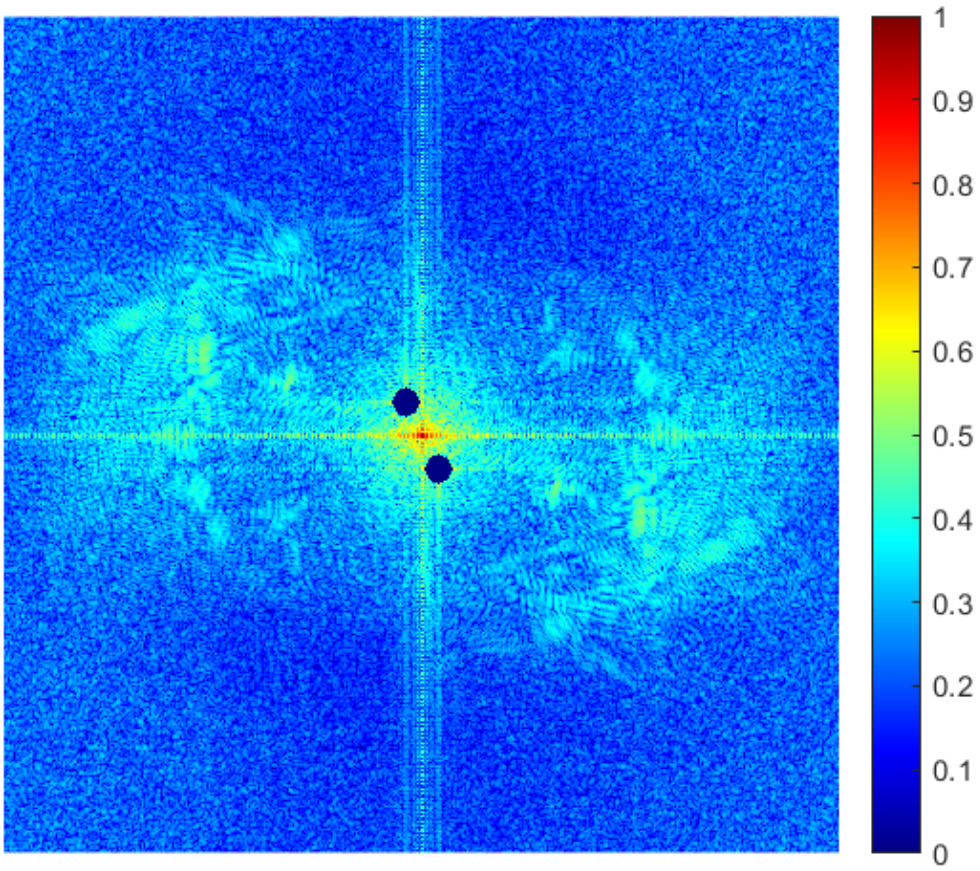

Figure 3: Filtered Image - Log of Fourier Plot (Padded Image)

Filtered Image

Figure 4: Filtered Image

Algorithm Design

After calculating the log Fourier magnitude of the padded original image, we computed the points where the intensity was greater than 80% of the central intensity keeping in mind that the point is not a central one. This computation also matched with the visually observed locations of high intensity. This provided us with the locations of the interfering frequencies which were blocked with a disc of radius 8 (can be seen in Fig. (3)) and thus the noise component of the image was cleared to a good enough extent (Fig. (4)). The disc size and the intensity threshold are parameters which were manually designed in order to get to the best possible results.