

Problem Statement

Consider the image with the low frequency noise pattern shared in the homework folder in the form of a .mat file. Your task is to (a) write MATLAB code to display the log magnitude of its Fourier transform, (b) to determine the frequency of the noise pattern by observing the log magnitude of the Fourier transform and guessing the interfering frequencies, and (c) to design and implement (in MATLAB) a notch filter to remove the interference(s) and display the restored image. To this end, you should use the `fft2`, `ifft2`, `fftshift` and `ifftshift` routines in MATLAB. [10 points]

Explanation

This was done by first plotting the log magnitude of the fourier transform of the image. We identified two frequencies that were not present in the original noise-free image. We set their magnitude to zero effectively removing those frequencies from the fourier spectrum. On taking the inverse fourier transform, the image was free of the pattern that was originally present.

