

MRI Task 1 Report

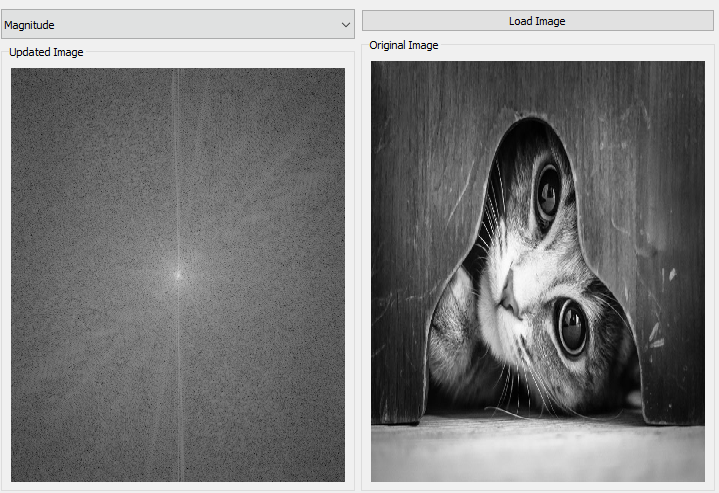
Ahmed Salah El-Din |Sec: 1|B.N: 5

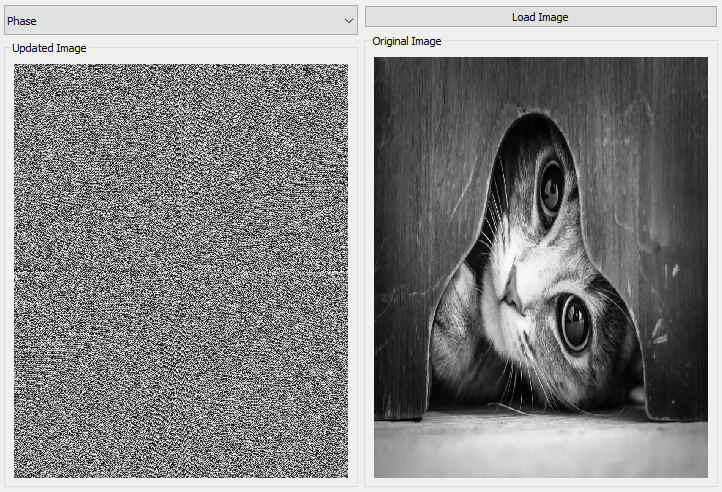
Ahmed Adel Ahmed |Sec: 1|B.N: 6

Salma Ayman Ahmed |Sec: 1|B.N: 37

Abdullah Mohammed Sabry |Sec: 2|B.N: 8

# Fourier Transform

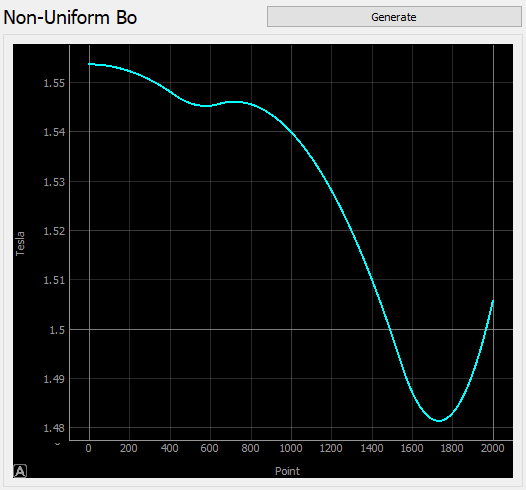
By applying the Discrete Fast Fourier Transform method, we obtained the Fourier Transform of an image, we then plotted its Components (Magnitude, Phase, Real Part, Imaginary Part) Separately

Figure Magnitude of the Fourier Transform of an image

Phase of the Fourier Transform of an image

# Non-Uniform Magnetic Field

We created a function that simulates the non-uniformity of a magnet, giving it the theoretical magnetic flux density in Tesla, maximum deviation due to the non-uniformity and the length of the magnet, using this data it generates a random curve we then plot this curve in our program.



The generated curve of the non-uniformity effect.

# Relaxation Process

It’s a process where the spins, which received a radiofrequency pulse which caused it to change the direction of it’s field, to release the energy it received from the pulse while returning to it’s original position