HW 1.C for 1.a.ii (Magnitude Neutralization)

1.c) We believe that the Fast Fourier Transform will be the most time consuming machine learning algorithm. It is the main algorithm we are using in this section of the homework.

1.c.i) This table is based on one function call per image. Not a combined time for all three images.
Also to note, these runtimes can vary widely each time the program is run.

Code Block	**Elapsed Time (averaged over 4 runs)**
Imread image	0.585700 E-02 seconds
Convert to Double type	0.326500 E-02 seconds
Convert to Grayscale	0.183425 E-02 seconds
2-D FFT	1.012050 E-02 seconds
Neutralizing the Magnitude	1.249530 E-02 seconds
2-D Inverse FFT	1.309500 E-02 seconds
Calculate Plot Limits to graph	1.752750 E-02 seconds

1.c.ii.2) fft2 and ifft2 each took 0.009 s and 0.006 s to run. Based off of one run.

Profile Summary

Generated 01-Mar-2018 17:11:12 using performance time.

Function Name	Calls	**Total Time**	Self Time*	Total Time Plot (dark band = self time)
HW1_1_a_ii	1	0.104 s	0.016 s	
imread	3	0.054 s	0.007 s	
imread>call_format_specific_reader	3	0.042 s	0.001 s	
imagesci\private\readbmp	3	0.040 s	0.001 s	
imagesci\private\imbmpinfo	3	0.030 s	0.003 s	
...\imbmpinfo>initializeBMPInfoStruct	3	0.019 s	0.001 s	
ima...i\private\initializeMetadataStruct	3	0.018 s	0.002 s	
datestr	3	0.016 s	0.002 s	
timefun\private\dateformverify	3	0.014 s	0.001 s	
timefun\private\formatdate	3	0.012 s	0.007 s	
close	1	0.011 s	0.003 s	
ifft2	3	0.009 s	0.009 s	
imagesci\private\readbmpdata	3	0.009 s	0.001 s	
ima...ivate\readbmpdata>bmpReadData24	3	0.008 s	0.004 s	
close>safegetchildren	1	0.007 s	0.001 s	
imagesci\private\imbmpinfo>readBMPInfo	3	0.007 s	0.001 s	
fft2	3	0.006 s	0.006 s	
allchild	1	0.006 s	0.003 s	
imagesci\private\imbmpinfo>readWin3xInfo	3	0.006 s	0.002 s	
cnv2icudf	3	0.005 s	0.005 s	
angle	3	0.004 s	0.004 s	
rgb2gray	3	0.003 s	0.002 s	
...te\imbmpinfo>readWin3xBitmapHeader	3	0.003 s	0.002 s	
ima...rivate\readbmpdata>readFromFile	3	0.003 s	0.002 s	
fileparts	3	0.003 s	0.002 s	

onCleanup>onCleanup.delete	7	0.002 s	0.001 s	
rot90	3	0.002 s	0.002 s	
imread>get_full_filename	3	0.001 s	0.001 s	
imread>parse_inputs	3	0.001 s	0.001 s	
cell.ismember	3	0.001 s	0.001 s	
ima...ate\imbmpinfo>readBMPFileHeader	3	0.001 s	0.001 s	
imagesci\private\imbmpinfo>getSignature	3	0.001 s	0.001 s	
rgb2gray>parse_inputs	3	0.001 s	0.001 s	
imagesci\private\imbmpinfo>postProcess	3	0.001 s	0.001 s	
...set(rootobj,'ShowHiddenHandles',Temp)	1	0.001 s	0.001 s	
...te\imbmpinfo>readVersion3xColormap	3	0.001 s	0.001 s	
allchild>getchildren	1	0.001 s	0.001 s	
imagesci\private\getFileFromURL	3	0.001 s	0.001 s	
onCleanup>onCleanup.onCleanup	7	0.001 s	0.001 s	
close>request_close	1	0.000 s	0.000 s	
uitools\private\allchildRootHelper	1	0.000 s	0.000 s	
close>getEmptyHandleList	1	0.000 s	0.000 s	
close>checkfigs	1	0.000 s	0.000 s	
ima...vate\readbmpdata>@()fclose(fid)	3	0.000 s	0.000 s	
datestr>getdateform	3	0.000 s	0.000 s	
ispc	3	0.000 s	0.000 s	
ima...ate\imbmpinfo>decodeCompression	3	0.000 s	0.000 s	
ima...rivate\imbmpinfo>@()fclose(fid)	3	0.000 s	0.000 s	