Weekly Report

OBJECTIVE

Be familiar with the CUFFT by implementing image compression with FFT.

PROCEDURE

1. Loading an image and convert it to an array by opencv library.
2. Memory allocation and copying data.
3. Creating *cufftPlan* by calling cufftPlan2d.
4. Executing the Plan by calling *cufftExecZ2Z* to achieve Fourier Transform on image.
5. Remaining the high frequencies and removing the major frequencies with low frequencies.
6. Calling *cufftExecZ2Z* to implement IFFT to get the compressed image.
7. Saving the image as jpg file using opencv library.

RESULT

Original image

Figure 1 Original gray image

Images after compression with different frequency keeping ratio.

Figure 2.1 Ratio = 1

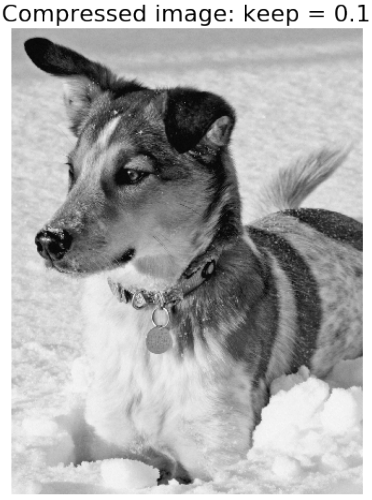

Figure 2.2 Ratio = 0.1

Figure 2.3 Ratio = 0.01

PROBLEMS & CONFUSION

In the imaging process on radio signal, is it possible to keep some specific frequencies to achieve relevantly high-quality image like compression here?

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