

[ECE 5460] Image Processing Optional Homework-Image Compression

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First, a grey scale image is input and transformed it into double format to make sure that it is a real number matrix. Then function "dctmtx" is used with parameter setting to 8 to perform the discrete cosine transform on image. To process image block by block, we use "blockproc" and to make sure the image size is divisible by block size, we set parameter "PadPartialBlocks" to true. Because the mask we use is a 8x8 size make, to compute the percentage of DCT use, we compute the ratio "1" in that mask, for example, if we want to have 3% of DCT use, we set 2 "1" in top left of the mask and leave rest of them "0". After setting the ratio of DCT use, this mask then is applied in "blockproc" function to process image block by block, and then transform back into compressed image.

Original Image



Enlarge



20% of DCT Use



Enlarge



3% of DCT Use



Enlarge

