Homework 6 - P4C

Sunday, November 17, 2019 4:29 PM

Futurama.PNG

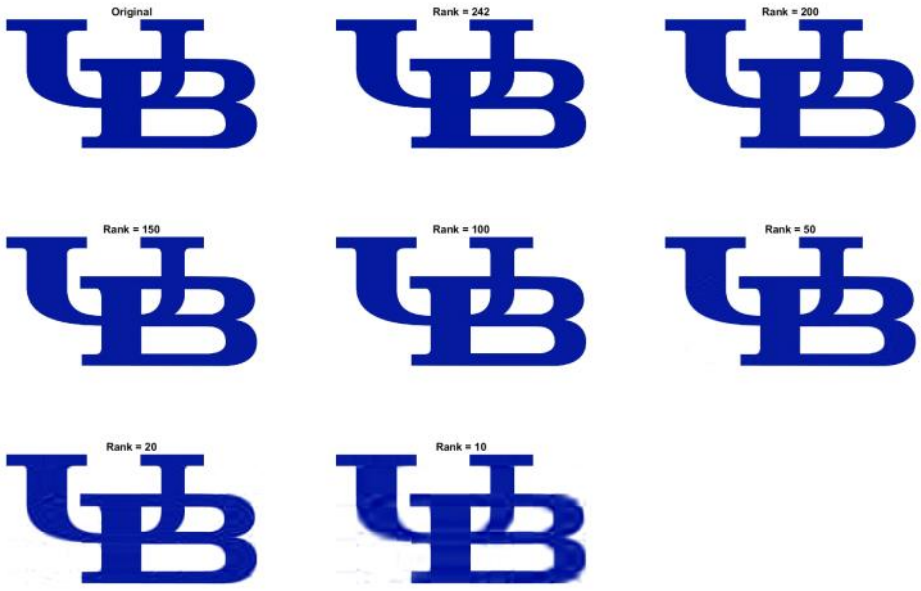
The rank of the given matrix is slightly higher than 1200, so we are decrementing the rank of the compressed image from 1200 onwards.

The tested array and the respective compression ratio is shown below:
futurama_array=[1200,1000,800,500,200,100,50];
compression_ratio_futurama = 1.4685 1.2238 0.9790 0.6119 0.2448 0.1224 0.0612
Best rank that retains the picture quality = 500
Compression ratio: 61.19%
Inference: As the initial image is of high quality and color, in order to reproduce the quality we need higher rank

UB.PNG

The rank of the given matrix is slightly higher than 240, so we are decrementing the rank of the compressed image from 240 onwards.

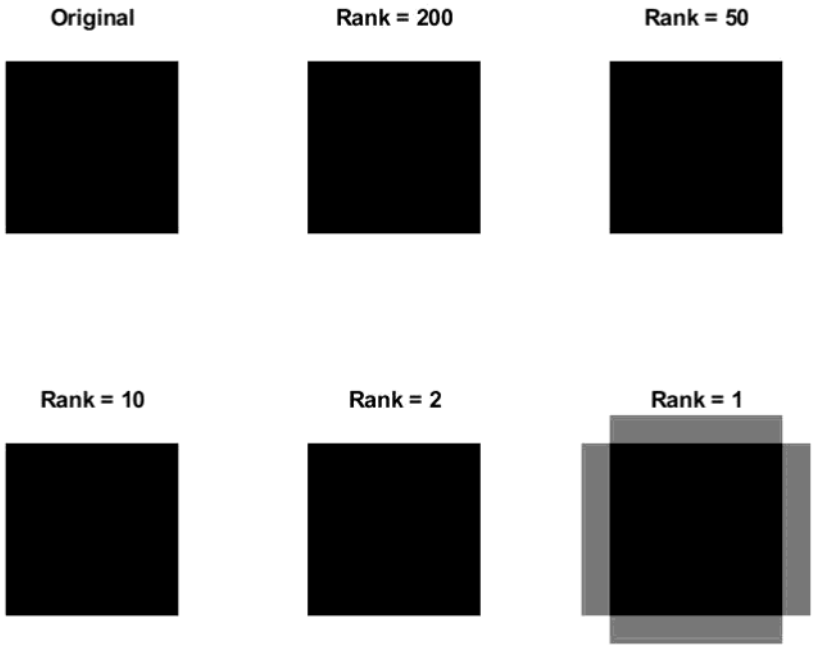
The tested array and the respective compression ratio is shown below:
UB_array=[242,200,150,100,50,20,10];
compression_ratio_UB = 0.8906 0.7360 0.5520 0.3680 0.1840 0.0736 0.0368
Best rank that retains the picture quality = 100
Compression ratio: 36.80%
Inference: The picture is monochromatic but not grey, so its easy to represent with lesser dimensions. So the compression ratio is better for UB picture compared to Futurama



square.PNG

The rank of the given matrix is 2, still decrementing the rank from 200

The tested array and the respective compression ratio is shown below:
square_array=[200,50,10,2,1];
compression_ratio_UB = 2.0050 0.5012 0.1003 0.0200 0.0100
Best rank that retains the picture quality = 2
Compression ratio: 2.00%
Inference: The boundary is clean and the picture is monochromatic, so its easy to represent the image with far lesser dimensions


Original
Rank = 200
Rank = 50
Rank = 10
Rank = 2
Rank = 1