

Screenshot of Results:

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Windows PowerShell

Epsilon = 0.1 (i.e. max. of 10% reduction of Frobenius-Norm of the Sketch Matrix)
Input File = data
Frobenius Norm of the (9 x 329) Data Matrix = 32803.6
Frobenius Norm of the (9 x 9) Sketch Matrix = 32802.7
Change in Frobenius-Norm between Sketch & Original = -0.00274%
File 'matrix_out.txt' contains a (9 x 9) Matrix-Sketch
PS C:\Users\Akshay\Documents\Visual Studio 2015\Projects\final2\Debug> .\final2.exe 9 329 0.02 data matrix_out.txt
Edo Liberty's Matrix Sketching Algorithm
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Original Data-Matrix has 9-rows & 329-cols
Epsilon = 0.02 (i.e. max. of 2% reduction of Frobenius-Norm of the Sketch Matrix)
Input File = data
Frobenius Norm of the (9 x 329) Data Matrix = 32803.6
Frobenius Norm of the (9 x 9) Sketch Matrix = 32802.7
Change in Frobenius-Norm between Sketch & Original = -0.00274%
File 'matrix_out.txt' contains a (9 x 9) Matrix-Sketch
PS C:\Users\Akshay\Documents\Visual Studio 2015\Projects\final2\Debug> .\final2.exe 9 329 0.45 data matrix_out.txt
Edo Liberty's Matrix Sketching Algorithm
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Original Data-Matrix has 9-rows & 329-cols
Epsilon = 0.45 (i.e. max. of 45% reduction of Frobenius-Norm of the Sketch Matrix)
Input File = data
Frobenius Norm of the (9 x 329) Data Matrix = 32803.6
Frobenius Norm of the (9 x 5) Sketch Matrix = 32791.2
Change in Frobenius-Norm between Sketch & Original = -0.0378%
File 'matrix_out.txt' contains a (9 x 5) Matrix-Sketch
PS C:\Users\Akshay\Documents\Visual Studio 2015\Projects\final2\Debug> .\final2.exe 50 1000 0.45 matrix_sketch1 matrix_o
ut.txt
Edo Liberty's Matrix Sketching Algorithm
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Original Data-Matrix has 50-rows & 1000-cols
Epsilon = 0.45 (i.e. max. of 45% reduction of Frobenius-Norm of the Sketch Matrix)
Input File = matrix_sketch1
Frobenius Norm of the (50 x 1000) Data Matrix = 12569.8
Frobenius Norm of the (50 x 5) Sketch Matrix = 11543.3
Change in Frobenius-Norm between Sketch & Original = -8.17%
File 'matrix_out.txt' contains a (50 x 5) Matrix-Sketch
PS C:\Users\Akshay\Documents\Visual Studio 2015\Projects\final2\Debug> .\final2.exe 50 1000 0.09 matrix_sketch1 matrix_o
ut.txt
Edo Liberty's Matrix Sketching Algorithm
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Original Data-Matrix has 50-rows & 1000-cols
Epsilon = 0.09 (i.e. max. of 9% reduction of Frobenius-Norm of the Sketch Matrix)
Input File = matrix_sketch1
Frobenius Norm of the (50 x 1000) Data Matrix = 12569.8
Frobenius Norm of the (50 x 23) Sketch Matrix = 12374.5
Change in Frobenius-Norm between Sketch & Original = -1.55%
File 'matrix_out.txt' contains a (50 x 23) Matrix-Sketch
PS C:\Users\Akshay\Documents\Visual Studio 2015\Projects\final2\Debug>
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