

Report

Homework 1

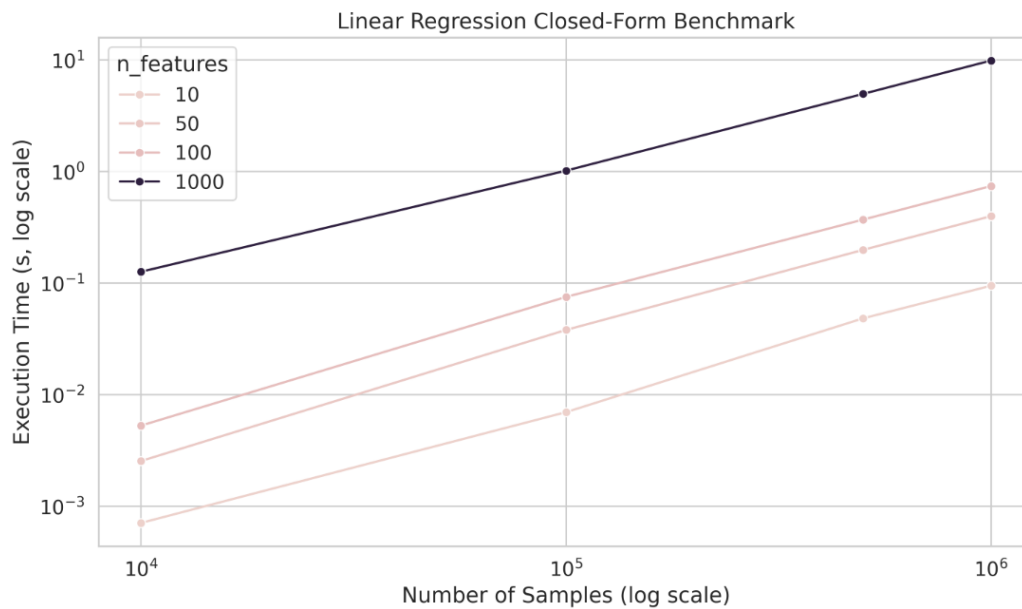
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Program: MHPC2

Benchmark Results

Number of Samples	10 Features	50 Features	100 Features	1000 Features
10,000	0.001 s	0.003 s	0.005 s	0.126 s
100,000	0.007 s	0.038 s	0.075 s	1.019 s
500,000	0.048 s	0.198 s	0.371 s	4.969 s
1,000,000	0.095 s	0.398 s	0.742 s	9.894 s

Graph



Summary:

After running the benchmark for permutations of number of samples and feature I noticed that:

- ⇒ Execution time increases with both sample size and feature values. It is expected as the computational complexity increases with the increase of the matrix operations.
- ⇒ Execution time had a massive increase with the dimensionality increase (number of features). This means that it directly affects the computational cost rather than sample size alone.