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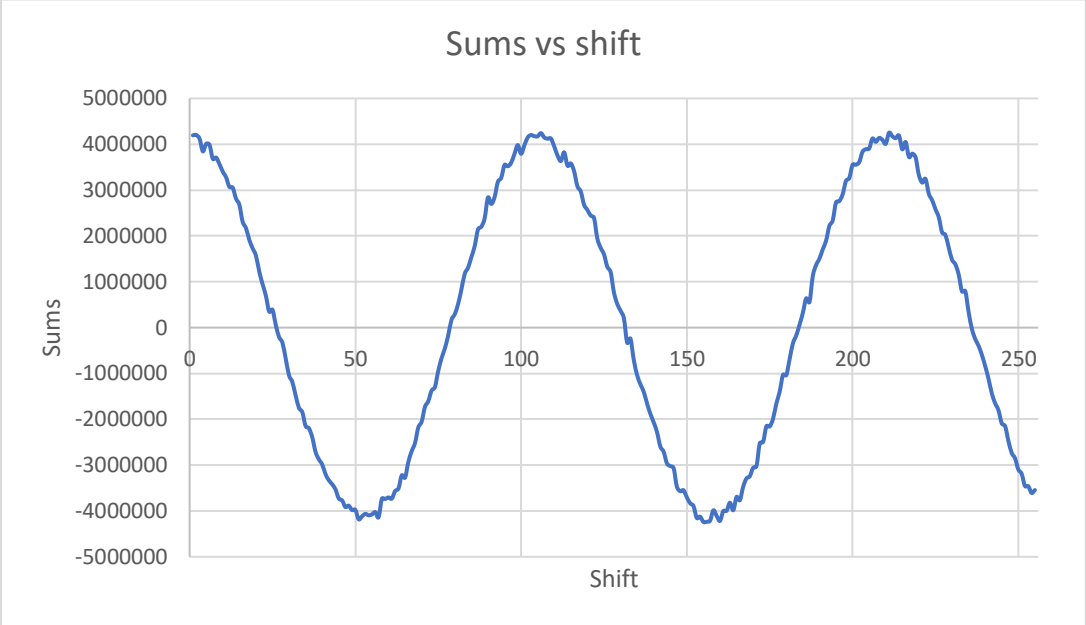
CS 475/575 -- Spring Quarter 2022

Project #7B

Autocorrelation using MPI

1. Show the Sums{1] ... Sums[255] vs. shift scatterplot.



2. State what the secret sine-wave period is, i.e., what *change in shift* gets you one complete sine wave?

   The secret sine-wave shift is 0-105

3. Show your graph of Performance vs. Number of Processors used.

Processors	Mega-autocorrelations computed per second
4	1326.65
6	1874.27
8	2384.9
10	2882.68
12	3286.86
14	3748.41
16	4212.35

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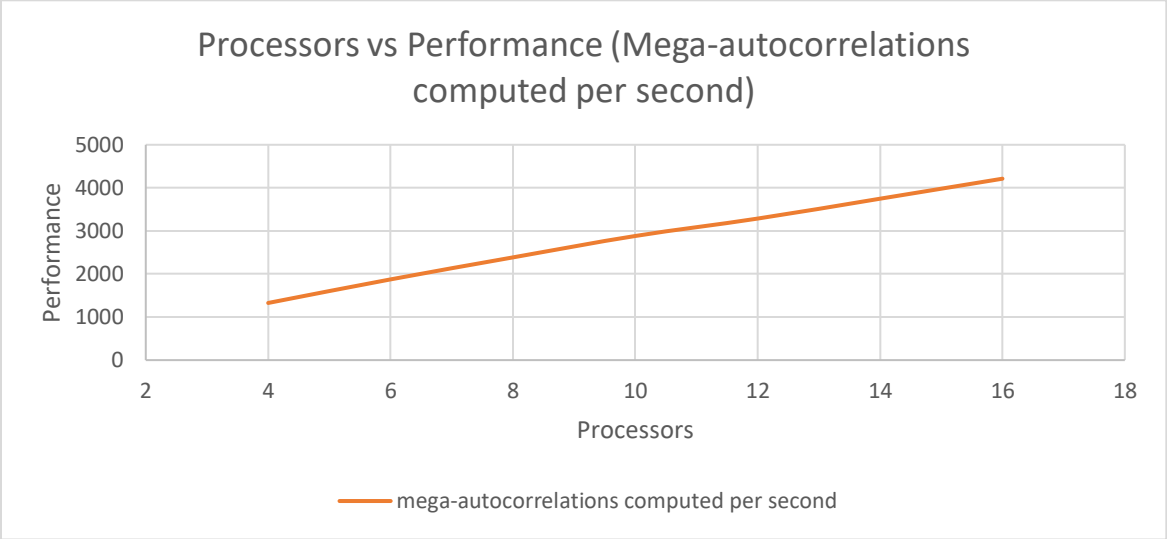

4. What patterns are you seeing in the performance graph?

   From the above graph, I have observed a linear increase in the performance with an increase in the number of processors.

5. Why do you think the performances work this way?

   There is a constant increase in the performance and this might be because the number of processors increases and the data that needs to be computed by a particular processor is reduced which helps reduce the processing time and increases the performance significantly.