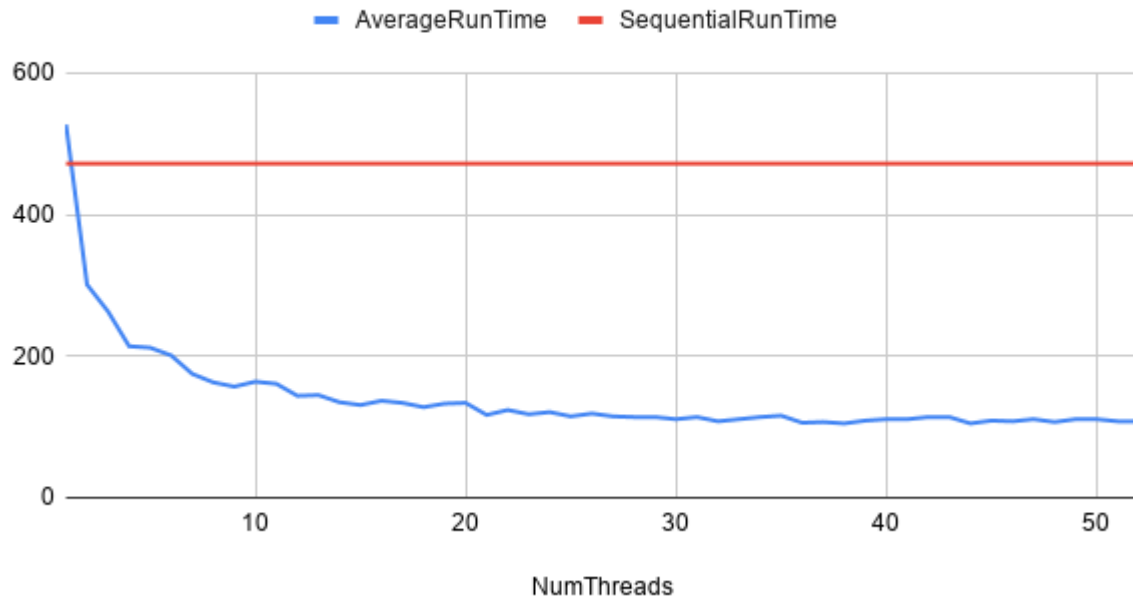


AverageRunTime and SequentialRunTime



The above results were recorded for an **n of 100'000'000**. 10'000'000 also produced similar results however as everything was significantly faster the speedup was less of an obvious curve. The above results are an average of 5 different runs, with one dummy run as a “warm-start” to ensure that the average is precise (minimal standard deviation). The results are as we would expect, the speed-up is logarithmic and so adding more threads eventually starts presenting diminishing results. According to a paper by Levcopoulos, C. and O. Petersson, **Matching Parentheses in Parallel** (<https://core.ac.uk/download/pdf/82750827.pdf>) the optimal speedup is likely to occur around $\log_2 n$ threads, which for 100'000'000 would occur around 26.5 threads, which is reasonably represented in our data.