Median-of-Median Algorithms with different Stopping Lengths

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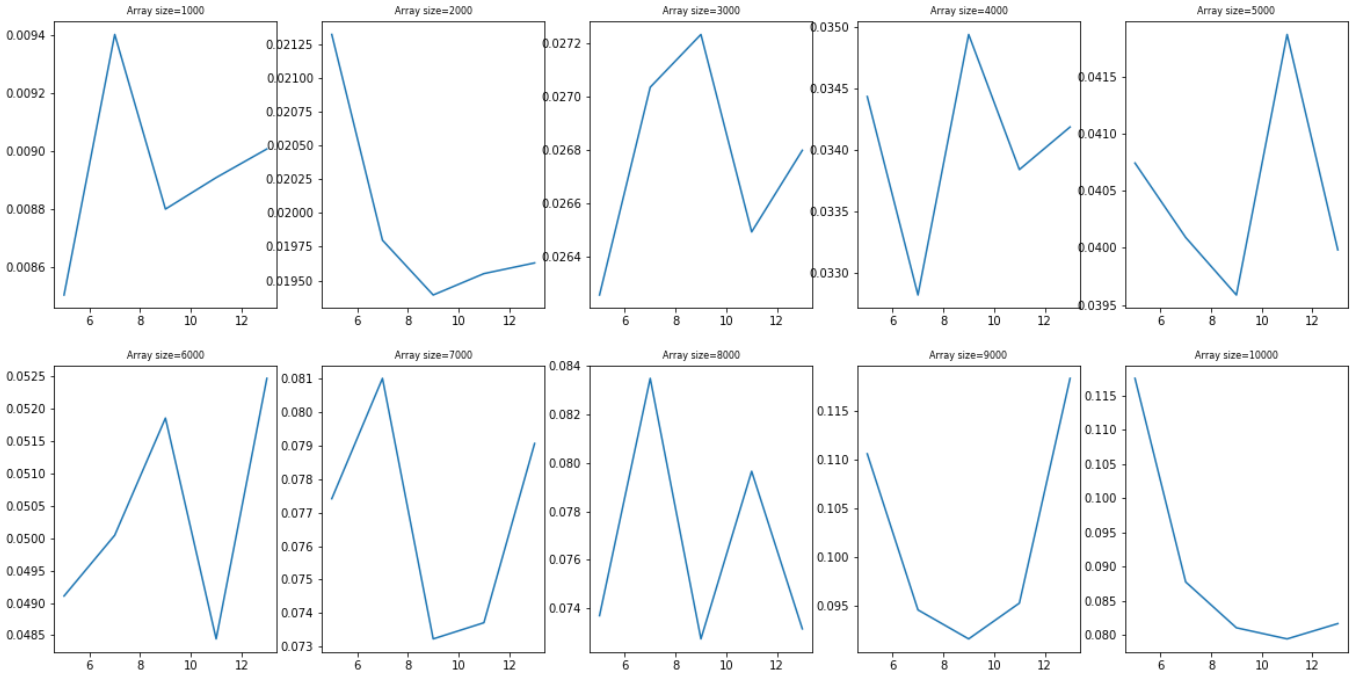
The plotted average execution time in 100 times trial versus stopping length $m \epsilon [5,7,9,11,13]$ for array size in $[1000:1000:10000]$ is shown in the following figure:



The figure gives us motivation to refute the theory that there is a minimum/optimal execution time for a stopping length. The reason is that for all these different array size, there is a local minimum, but the choice of stopping length m is different. For example, when array size of 9000, the minimum is achieved when stopping length is 9, while, it is 11 for array size of 6000. Also, stopping length of 7 is optimal for array size of 4000 and 5 is optimal for array size of 1000. Therefore, there is evidence that the optimal stopping length doesn't exist for execution time of median of median algorithm.