Median-of-Median Algorithms with different Stopping Lengths

Chen Yuhao

NetId Yuhaoc2

Graduate Student

The plotted average execution time in 100 times trial versus stopping length for array size in is shown in the following figure:

图片包含 窗户, 天空, 建筑物, 展示

描述已自动生成

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.