



The plot is made with image size of 200 and feature size of 5.

For this assignment, I requested one node for computing resource. There are two sockets on a single node and there are 10 physical cores on a single socket. Therefore, there are 40 virtual cores on a single node I requested. To achieve maximum performance, we set the largest thread size to 40. Using more threads is not productive, and does not reflect the scaling of the algorithm.

The calculation runtime decreases as I increase the thread size. The decreasing rate is very large when the thread size is small approximately from 1 to 6. After the thread size increases to 25, the runtime begins to increase, this is because the false sharing is happening due to spatial locality, so that the overall parallel computing performance becomes lower.