Abstract

Nowadays, there is a technology that allows programmers to use GPU resources to perform data processing on non-graphics applications in parallel. This technology can be used to handle such a huge data calculation like Traveling Salesman Problem (TSP). Genetic Algorithm is really suitable to handle complex optimation problems like TSP which is really hard to be solved only with conventional methods. However to obtain solution which approximates the best solution, we have to determine proper design and configuration of the Genetic Algorithm used.

This final project discusses about the application of parallel Genetic Algorithm on the GPU to solve the TSP. From the test results, it can be analyzed that the implementation of Master-Slave GA generaly has a better performance improvement compared with Multiple-Deme GA, both in terms of search time and search results.

Keywords : Genetic Algorithm, Parallel, TSP, CUDA, GPU.