Abstract

Parallel computing is a form of computation in which many calculations are carried out simultaneously, operating on the principle that large problems can often be divided into smaller ones, which are then solved concurrently. Now Graphics Processing Unit (GPU) has taken a major role in high performance computing for generic applications. Compute Unified Device Architecture (CUDA) programming model provides the programmers adequate C-Language like API’s to better exploit the power of GPU. Data Mining has significant applications in various domains. Currently, these techniques cannot meet the requirement of applications with large scale databases in terms of computation and speed. Association Rules Mining (ARM) is one of the most widely used techniques in data mining and has tremendous applications. Apriori is the most influential ARM algorithm. It has been included in all the existing commercial and non-commercial data mining. This paper provides a parallel Apriori algorithm on GPU with CUDA and focuses on computation time compared with execution time of serial program in CPU.
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Parallelizing Apriori Algorithm on GPU


Index Terms

Computer Science  Algorithms

Keywords

Parallel Computing, GPGPU, GPU, CUDA, Data Mining, Parallel Apriori Algorithm