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**AN EFFICIENT PARALLEL METHOD FOR MINING FREQUENT CLOSED SEQUENTIAL PATTERNS**

**Abstract:**

Mining frequent closed sequential pattern (FCSPs) has attracted a great deal of research attention, because it is an important task in sequences mining. In recently, many studies have focused on mining frequent closed sequential patterns because, such patterns have proved to be more efficient and compact than frequent sequential patterns. Information can be fully extracted from frequent closed sequential patterns. In this paper, we propose an efficient parallel approach called parallel dynamic bit vector frequent closed sequential patterns (pDBV-FCSP) using multi-core processor architecture for mining FCSPs from large databases. The pDBV-FCSP divides the search space to reduce the required storage space and performs closure checking of prefix sequences early to reduce execution time for mining frequent closed sequential patterns. This approach overcomes the problems of parallel mining such as overhead of communication, synchronization, and data replication. It also solves the load balance issues of the workload between the processors with a dynamic mechanism that re-distributes the work, when some processes are out of work to minimize the idle CPU time.