Classification Rule Discovery by Using Parallel Ant Colony Optimization

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Abstract : Ant-Miner algorithm that lies under ACO algorithms is used to extract knowledge from data in the form of rules. A variant of Ant-Miner algorithm named as cAnt-MinerPB is used to generate list of rules using pittsburgh approach in order to maintain the rule interaction among the rules that are generated. In this paper, we propose a parallel Ant MinerPB in which Ant colony optimization algorithm runs parallel. In this technique, a data set is divided vertically (i-e attributes) into different subsets. These subsets are created based on the correlation among attributes using Mutual Information (MI). It generates rules in a parallel manner and then merged to form a final list of rules. The results have shown that the proposed technique achieved higher accuracy when compared with original cAnt-MinerPB and also the execution time has also reduced.
Keywords : ant colony optimization, parallel Ant-MinerPB, vertical partitioning, classification rule discovery