A Novel PSO Based Decision Tree Classification

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Abstract : Classification of data objects or patterns is a major part in most of Decision making systems. One of the popular and commonly used classification methods is Decision Tree (DT). It is a hierarchical decision making system by which a binary tree is constructed and starting from root, at each node some of the classes is rejected until reaching the leaf nods. Each leaf node is a representative of one specific class. Finding the splitting criteria in each node for constructing or training the tree is a major problem. Particle Swarm Optimization (PSO) has been adopted as a metaheuristic searching method for finding the best splitting criteria. Result of evaluating the proposed method over benchmark datasets indicates the higher accuracy of the new PSO based decision tree.

Keywords : decision tree, particle swarm optimization, splitting criteria, metaheuristic
Conference Title : ICMI 2015 : International Conference on Machine Intelligence
Conference Location : Stockholm, Sweden
Conference Dates : July 13-14, 2015