Abstract

Today’s real world faces different kinds of complex optimization problems. The existing methodologies can’t cope of with such complex problems. This paper presents classification rule mining as a multi-objective problem rather than a single objective one. Multi-Objective optimization is a challenging area and focus for research. Here two modern domains of research are discussed one is swarm intelligence and other is data mining. In this paper PSO is taken as taken as a swarm intelligence algorithm and classification rule mining is taken as the problem domain. In classification rule discovery, classifiers are designed through the following two phases: rule extraction and rule selection. In the rule extraction phase, a large number of classification rules are extracted from training data. This phase is based on two rule evaluation criteria: support (coverage) and confidence. An association rule mining technique is used to extract classification rules satisfying pre-specified threshold values of minimum support (coverage) and confidence. In second phase, a small number of rules are targeted from the extracted rules to design an accurate and compact classifier. In this paper, I used PSO for multiple objective rule selection to maximize the accuracy of the rule sets and minimize their
complexity.

References

PSO based Swarm Intelligence Technique for Multi-Objective Classification Rule Mining


Index Terms

Computer Science

Information Sciences

Keywords

Classification, multi-objective optimization, particle swarm optimization, multi-objective classification problem, pattern recognition, data mining.