Abstract

Ant Colony Optimization (ACO) studies artificial systems that take inspiration from the behavior of real ant colonies and which are used to solve discrete optimization problems. ACO can be applied to the data mining field to extract rule-based classifiers. This paper presents variations of Ant-Miner named cAnt-Miner (Ant-Miner coping with continuous attributes), which incorporates an entropy-based discretization method in order to cope with continuous attributes during the rule construction process and Ant-Tree-Miner (constructing decision trees based on ACO) which generates classifications rules always in graphical form (Decision Tree). Three algorithms (Ant-Miner, Ant-Tree-Miner and cAnt-Miner) are compared against input parameters with respect to predictive accuracy and simplicity of the discovered rules.

References

- Han J., Kamber M.: Data Mining – Concepts and Techniques
- Singler J., Atkinson B.: Data Mining using Ant Colony Optimization
Comparative Analysis of Variations of Ant-Miner by Varying Input Parameters


Index Terms

Computer Science  Artificial Intelligence

Keywords
Ant colony optimization  cAnt-Miner  Ant-Tree-Miner  decision tree