Abstract

Decision tree classification method is easily interpreted, efficient and fast with the functions of discrete-value approach. One of decision tree method, for example id3 algorithm has a weakness when the type attribute is numeric, so we must divide the domain range. Discretization of domain range would be difficult if there is no knowledge about the characteristics of data. So we used a fuzzy approach in fuzzy id3 algorithm, where the fuzzy values will facilitate the process of division into the linguistic range with a certain degree of membership. Fuzzy have a trouble if there is no information about the boundaries of membership and the membership function, therefore used a genetic algorithm, so the process of finding the tree with high accuracy more easy.

By combining these methods be fuzzy decision tree with genetic algorithm(AG-FDT), the best system performance is measured by the accuracy obtained when the population size of 40, crossover probability 0.75, fuzziness control threshold of 80% and 12% leaf decision threshold. And AG-FDT have better accuracy when compare with id3 classification algorithm.

Keyword : *classification, fuzzy decision tree, genetic algorithm.*