

***Abstract: Design of Interval Type-2 FCM-based Fuzzy Inference Systems and Its Optimization***

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**Abstract**

We introduce a design methodology of interval type-2 fuzzy c-means clustering algorithm-based fuzzy inference systems (IT2FCMFIS). The premise part of the rules of the model is realized with the aid of the scatter partition of input space generated by interval type-2 fuzzy c-means (IT2FCM) clustering algorithm. The number of the partition of input space is equal to the number of clusters and the number of fuzzy rule. And the individual partitioned spaces describe the fuzzy rules. The consequence part of the rule is represented by polynomial functions with interval set. To optimally identify the structure and the parameters of fuzzy model we exploit real-coded genetic algorithms with successive optimization. The proposed model is evaluated through the numeric experimentation.