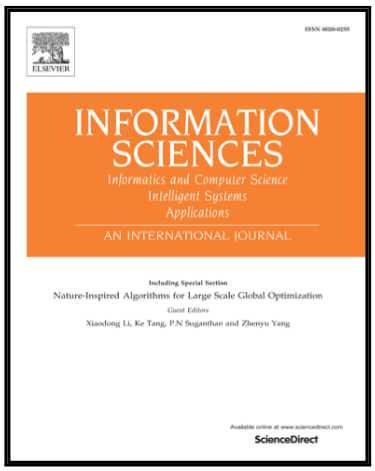

On rule acquisition in incomplete multi-scale decision tables

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On rule acquisition in incomplete multi-scale decision tables

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Abstract

Granular computing and acquisition of if-then rules are two basic issues in knowledge representation and data mining. A rough set approach to knowledge discovery in incomplete multi-scale decision tables from the perspective of granular computing is proposed in this paper. The concept of incomplete multi-scale information tables in the context of rough sets is first introduced. Information granules at different levels of scales in incomplete multi-scale information tables are then described. Lower and upper approximations with reference to different levels of scales in incomplete multi-scale information tables are also defined and their properties are examined. Optimal scale selection with various requirements in incomplete multi-scale decision tables are further discussed. Relationships among different notions of optimal scales in incomplete multi-scale decision tables are presented. Finally, knowledge acquisition in the sense of rule induction in consistent and inconsistent incomplete multi-scale decision tables are explored.

Key words: Belief functions; Granular computing; Incomplete information tables; Multi-scale decision tables; Rough sets

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