

Attribute reduction in incomplete decision tables with changing data using a tolerance rough set model approach

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Abstract: This paper studies attribute reduction in incomplete decision tables with time-varying data. The research proposes a reduction method based on the tolerance rough set model, which effectively handles missing values without imputation. In particular, the incremental computing approach updates the reduction set when data changes without recomputing from scratch, optimizing time and computational resource costs. The research results provide an efficient algorithm that maintains classification accuracy while minimizing redundant attributes. This serves as an important scientific foundation for building intelligent decision support systems.

Keywords: Attribute reduction, Tolerance rough set, Incomplete decision table, Changing data, Incremental computation