Abstract

The Rough Set (RS) theory can be considered as a tool to reduce the input dimensionality and to deal with vagueness and uncertainty in datasets. Over the years, there has been a rapid growth in interest in rough set theory and its applications in artificial intelligence and cognitive sciences, especially in research areas such as machine learning, intelligent systems, inductive reasoning, pattern recognition, data preprocessing, knowledge discovery, decision analysis, and expert systems. This paper discusses the basic concepts of rough set theory and point out some rough set-based research directions and applications. The discussion also includes a review of rough set theory in various machine learning techniques like clustering, feature selection and rule induction.

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