Abstract

As an important task of relational database, relational classification can directly classify the data that involve multiple relations from a relational database and have more advantages than propositional data mining approaches. The information age has provided us with huge data repositories which cannot longer be analyzed manually. Most available existing data mining algorithms looks for pattern in a single relation. To classify data from relational database need of multi-relational classification arise which is used to analyze relational database and used to predict behavior and unknown pattern automatically which include business data, bioinformatics, pharmacology, web mining, credit card fraud detection, disease diagnosis system, computational biology, online retailers. In this paper, we present the several kinds of multi-relational classification methods including Inductive Logic Programming (ILP) based, Associative based multi-relational classification, Emerging Patterns based, Relational database based classification approaches and discuss each relational classification approaches, their characteristics, their comparisons and challenging issues in detail.
- Gu, Y., Liu, H., He, J. "MrCAR: A Multi relational Classification Algorithm based

- Hongyan Liu, Xiaoxin Yin, Jiawei Han, “An Efficient Multi-relational Naïve Bayesian Classifier Based on Semantic Relationship Graph”, Proceeding MRDM ‘05 Proceedings of the 4th international workshop on Multi-relational mining, Pages 39 – 48, ACM New York, NY, USA ©2005.

- Raymond J. Mooney, Prem Melville, Lappoon Rupert Tang, "Relational Data Mining with Inductive Logic Programming for Link Discovery"; National Science Foundation Workshop on Next Generation Data Mining, Nov. 2002, Baltimore, MD.
- Seda Daglar Toprak, Pinar Senkul, "A New ILP-based Concept Discovery Method for Business Intelligence"; 2007, IEEE.

- Xiaoxin Yin, Jiawei Han, Jiong Yang, et al. "Efficient Classification across Multiple Database Relations: A CrossMine Approach"; IEEE Transactions on Knowledge and Data Engineering, 2006, 18 (6):770-783.
- Xiuzhen Zhang, Guozu Dong, Ramamohanarao Kotagiri, "Exploring constraints to efficiently mine emerging patterns from large high-dimensional datasets"; Proceedings of the sixth ACM SIGKDD international conference on Knowledge discovery and data mining, p. 310-314, August 20-23, 2000, Boston, Massachusetts, United States.
- Yin X, Han J, and Yu PS, "CrossMine: Efficient Classification across Multiple Database Relations"; In Proceedings of 20th Int. Conf. on Data Engineering (ICDE&apos;04), 2004.

Index Terms

Computer Science

Information Sciences
Keywords

Relational data mining  Multi-relational classification  Inductive Logic Programming
Tuple ID Propagation
Selection Graph
Decision Tree