

Documents

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Fuzzy rule-based system applied to risk estimation of cardiovascular patients

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Abstract

Cardiovascular decision support is one area of increasing research interest. On-going collaborations between clinicians and computer scientists are looking at the application of knowledge discovery in databases to the area of patient diagnosis, based on clinical records. A fuzzy rule-based system for risk estimation of cardiovascular patients is proposed. It uses a group of fuzzy rules as a knowledge representation about data pertaining to cardiovascular patients. Several algorithms for the discovery of an easily readable and understandable group of fuzzy rules are formalized and analysed. The accuracy of risk estimation and the interpretability of fuzzy rules are discussed. Our study shows, in comparison to other algorithms used in knowledge discovery, that classification with a group of fuzzy rules is a useful technique for risk estimation of cardiovascular patients. © 2013 Old City Publishing, Inc.

Author Keywords

Cardiology; Classification; Classification ambiguity; Cumulative information estimations; Fuzzy rules; Linguistic variable elimination; Medical data mining

Index Keywords

Classification, Computer scientists, Fuzzy rule-based systems, Information estimation, Knowledge discovery in database, Linguistic variable, Medical data mining, Research interests; Algorithms, Cardiology, Decision support systems, Diagnosis, Estimation, Fuzzy rules, Knowledge representation; Risk perception

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