Abstract
Verification of knowledge bases is an important aspect of the development procedure of rule-based expert systems. The objective of verification is to assure producing a successful intelligent computer system that reaches correct recommendations. This research introduces an attribute-rule dependency matrix verification method and its associated Java implementation program. The method can help knowledge engineers and domain experts in the automated verification process of rule-based knowledge bases for both consistency and completeness. The method can also help in the documentation of expert systems' facts and If-Then rules. A wide variety of knowledge bases has been successfully debugged and analyzed using the introduced verification method.

References

- L. De Raedt, G. Sablon, and M. Bruynooghe, “Using Interactive Concept Learning for Knowledge-Base Validation and Verification,” Validation, Verification, and Test of
- M. Ayman Al Ahmar, "A Prototype Student Advising Expert System Supported with an Object-Oriented Database", International Journal of Advanced Computer Science and
Applications, Special Issue on Artificial Intelligence, pp. 100-105, 2011.

**Index Terms**

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**Keywords**

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