Rödder, Wilhelm; **Reucher, Elmar**; **Kulmann, Friedhelm**
Features of the expert-system-shell SPIRIT. (English) Zbl 1109.68653
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Summary: The inference process in a probabilistic and conditional environment under minimum relative entropy, permits the acquisition of basic knowledge, the consideration of - even uncertain - ad hoc knowledge, and the response to queries. Even if these procedures are well known in the relevant literature their realisation for large-scale applications needs a sophisticated tool, allowing the communication with the user as well as all relevant logical transformations and numerical calculations. SPIRIT is an Expert-System-Shell for these purposes. Even for hundreds of – consistent – facts about the involved variables' dependencies the shell automatically generates the corresponding epistemic state, thus permitting the derivation of conclusions from the acquired knowledge. These conclusions' reliability or precision can be checked, inviting the user to enrich the knowledge by further facts, if desired. Any inconsistencies among provided facts are detected, and their elimination will be supported by the shell. Knowledge acquisition can come from provided facts by a knowledge engineer as well as from real world data; inductive learning supports the use of such data. An important capability of the shell is the calculation of impacts upon ideas or concepts from a given stimulus. This paper is a brief survey of theoretical concepts and the corresponding features of the system, which are accompanied by illustrative examples.

MSC:

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