

Title: A Fuzzy-Mining Approach for Solving Rule Based Expert System Unwieldiness in Medical Domain.

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Outlet: International Journal of Non -Standard Computing (Neural Network World) Vol. 23(5), 435-450.12013.

Date:

Abstract: Over the years, one of the challenges of a rule based expert system is the possibility of evolving a compact and consistent knowledge-base with a fewer numbers of rules that are relevant to the application domain, in order to enhance the comprehensibility of the expert system. In this paper, the hybrid of fuzzy rule mining interestingness measures and fuzzy expert system is exploited as a means of solving the problem of unwieldiness and maintenance complication in the rule based expert system. This negatively increases the knowledge-base space complexity and reduces rule access rate which impedes system response time. To validate this concept, the Coronary Heart Disease risk ratio determination is used as the case study. Results of fuzzy expert system with a fewer numbers of rules and fuzzy expert system with a large numbers of rules are presented for comparison. Moreover, the effect of fuzzy linguistic variable risk ratio is investigated. This makes the expert system recommendation close to human perception.