

Experts provide Feedback on Patterns produced by a Temporal Discovery Workbench

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ABSTRACT

An earlier study asked two experts to discuss conditions under which Myocardial Damage (MD) can occur in ICU patients; these experts were shown temporal records where some sequences resulted in MD and others which did not. The resulting model was quite complex as it contained temporal constraints as well as the usual conjunctive and disjunctive terms. This was a classical KC Study. We have since implemented a Temporal Discovery Workbench (TDWB) to process the same temporal datasets to see if TDWB can discover simpler patterns to explain the same datasets. Subsequently, we have shown that the sets of patterns produced by TDWB generally have better “coverage”, than those produced by the original model. We then investigated whether some of the latter patterns might be clinically unacceptable. Recently we ran a pilot study in which we asked a single clinician to evaluate the patterns produced by TDWB, and to say whether they were acceptable, and why. This further information has now been implemented in TDWB; the resulting set of filtered patterns still has better coverage than the initial set of “manual” patterns.

Bio:

Derek Sleeman is Emeritus Professor of Computing Science at Aberdeen University, and Visiting Professor, School of Medicine, University of Glasgow. He is a Fellow of the Royal Society of Edinburgh and of the European AI Societies. He has held academic posts at Leeds, UT Austin, Stanford and Aberdeen. Derek Sleeman's research combines Artificial Intelligence and Cognitive Science with a focus on Co-operative Knowledge Acquisition and Knowledge Refinement Systems, Reuse of Knowledge Sources, Capture of Expertize, and Ontology Management systems, with extensive applications to Education, Engineering and Medicine.