Abstract

Reasoning and mining over temporal patterns has to be more specific and accurate for efficient knowledge discovery. The patterns expressed with the temporal interval relationships
Temporal pattern mining and reasoning using Reference Event based Temporal Relations (RETR)

of Allen have the problem of aggregating many events under one relation “before” and hence leads to ambiguity. In this work an attempt has been made to overcome this by augmenting the “before” relation with four contextual Reference Event based Temporal Relations (RETR) so that temporal ordering of events can be identified more efficiently and hence resulting in effective knowledge discovery. Moreover, Roddick refined temporal relations by considering the midpoints for equal length intervals wherein the temporal relations proposed in this paper extending the “before” relation can be applied both to equal, unequal length intervals with midpoints. The superiority of this novel form of representing temporal knowledge can be proved by incorporating these topological temporal relations in a time ontology which eventually would result in efficient reasoning. This has been demonstrated by presenting a real life data set from medical domain.

References

Temporal pattern mining and reasoning using Reference Event based Temporal Relations (RETR)


**Index Terms**

Computer Science  
Pattern Recognition

**Keywords**

Allen Interval Algebra  
Knowledge representation

mining  
Temporal reasoning and

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