Narrative Generation from Extracted Associations

Pierre-Luc Vaudry and Guy Lapalme

Université de Montréal, Montréal, Canada
{vaudrypl,lapalme}@iro.umontreal.ca

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In [1], we study how causal relations may be used to improve narrative generation from real-life temporal data. We describe a method for extracting potential causal relations from temporal data and for structuring a generated report. The method is applied to the generation of reports highlighting unusual combinations of events in the Activity of Daily Living (ADL) domain.

Our experiment applies association rules discovery techniques in [2] for selecting candidate associations based on three properties: frequency, confidence and significance. We assume that temporal proximity and temporal precedence are indicators of potential causality.

The generation of a report from the ADL data for a given period follows a pipeline architecture. The first stage is data interpretation, which consists of finding instances of the previously selected association rules in the input. For each of those, one or more semantic relations are introduced as part of a hypothetic interpretation of the input data. Next those relations are used to plan the document as a whole in the document planning stage. The output is a rhetorical structure which is then pruned to keep only the most important events and relations. Follows a microplanning stage that plans the phrases and lexical units expressing the events and rhetorical relations. This produces a lexico-syntactic specification that is realised as natural language text in the last stage: surface realisation.

After analysing the results, the extracted relations seem to be useful to locally link activities with explicit rhetorical relations. However, further work is needed to better exploit them for improving coherence at the global level.

References

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