From Narrative Text to Formal Action Language System Descriptions

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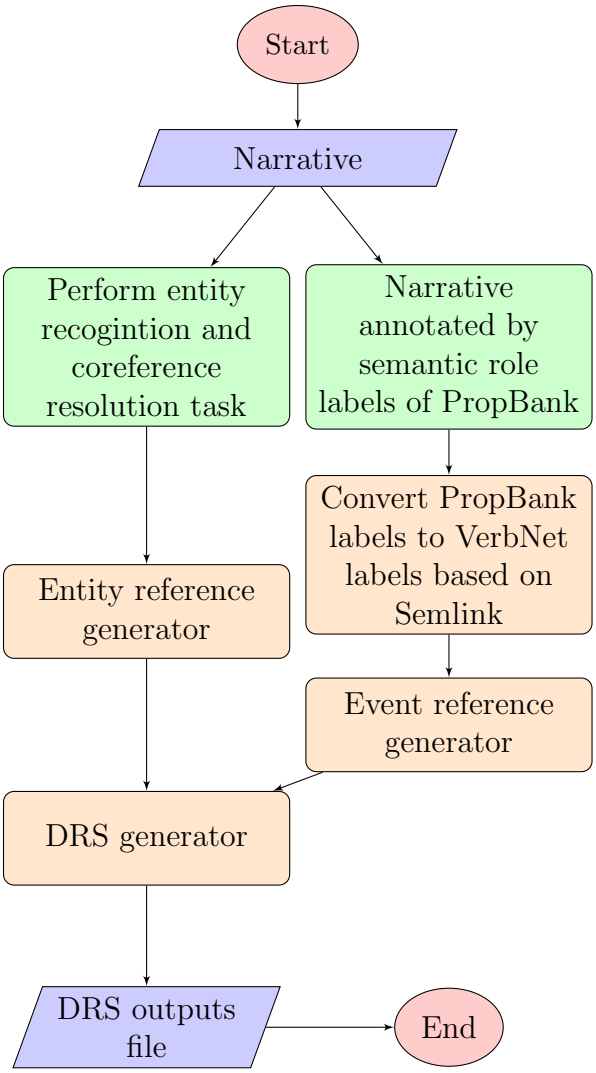
February 2018

Introduction

Computational linguists have long studied various logic forms for capturing essential semantic information carried by narratives. Among these logic forms, discourse representation structure (DRS) form[Kamp and Reyle, 1993] is designed to acquire the entities, entities' property, events, event types, the occurring time of events, and event arguments. In this paper, we describe a system called Text2DRS that takes English narrative as an input and outputs DRS in Neo-Davidsonian style. In this regard, it is similar to Boxer[Bos, 2008] which is an open-domain NLP tool for semantic analysis of a text. Boxer also produces a respective DRS of a given narrative. However, Boxer ignores the chronological orders of events in the narrative and misses details in event arguments. Text2DRS captures and provides these missing information. Furthermore, Text2DRS relies on lexical resource VerbNet[Kipper-Schuler, 2005, Palmer, 2006] for annotating the specific relations between relevant entities and events mentioned in the narrative.

Text2DRS Details

Text2DRS is implemented on top of the LTH system[Johansson and Nugues, 2007] and the Standford coreNLP system[Manning et al., 2014]. The LTH is a semantic parser for unrestricted text in English that uses predicates from PropBank[Palmer et al., 2005]. The Standford CoreNLP system provides a set of NLP tools including the coreference resolution system. Text2DRS utilizes functions from these two systems for processing given narrative.



Conclusion

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