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CODRA: A Novel Discriminative Framework for Rhetorical Analysis

Shafiq Joty, Giuseppe Carenini and Raymond T. Ng

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Clauses and sentences rarely stand on their own in an actual discourse; rather, the relationship between them carries important information that allows the discourse to express a meaning as a CODRA: A Novel Discriminative Framework for Rhetorical Analysis | Computational Linguistics | MIT Press Journals

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whole beyond the sum of its individual parts. Rhetorical analysis seeks to uncover this coherence structure. In this article, we present CODRA – a COmplete probabilistic Discriminative framework for performing Rhetorical Analysis in accordance with Rhetorical Structure Theory, which posits a tree representation of a discourse.

CODRA comprises a discourse segmenter and a discourse parser. First, the discourse segmenter, which is based on a binary classifier, identifies the elementary discourse units in a given text. Then the discourse parser builds a discourse tree by applying an optimal parsing algorithm to probabilities inferred from two Conditional Random Fields: one for intra-sentential parsing and the other for multi-sentential parsing. We present two approaches to combine these two stages of parsing effectively. By conducting a series of empirical evaluations over two different data sets, we demonstrate that CODRA significantly outperforms the state-of-the-art, often by a wide margin. We also show that a reranking of the k-best parse hypotheses generated by CODRA can potentially improve the accuracy even further.

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