

Computational Frameworks for Supporting Textual Inference

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Textual Inference requires the analyzing text at multiple levels as well as to disambiguating it and grounding it in knowledge resources to facilitate knowledge driven reasoning.

Computational approaches to these problems in Natural Language Understanding and Information Extraction are often modeled as structured predictions predictions that involve assigning values to sets of interdependent variables. Over the last few years, one of the most successful approaches to studying these problems involves Constrained Conditional Models (CCMs), an Integer Learning Programming formulation that augments probabilistic models with declarative constraints as a way to support such decisions.

I will focus on exemplifying this framework in the context of developing better semantic analysis of sentences Extended Semantic Role Labeling and the task of Wikification identifying concepts and entities in text and disambiguating them into Wikipedia or other knowledge bases.