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The continued relevance of rule-based semantic parsing in the age of deep learning: an introduction to the Universal Natural Language Understanding project.

The success of recent neural-network-based approaches to natural language processing leaves doubts about the relevance of more traditional rule-based methods. The Universal Natural Language Understanding project seeks to explore the role of such rule-based systems within the specific domain of semantic parsing. In this talk, I first present the language-agnostic system we are developing, and discuss some of the theoretical implications that arise from this (including the development of a syntax-semantics interface for dependency grammars). In the second part of the talk, I compare our results to the state of the art in machine learning. It turns out that the effectiveness of neural-network semantic parsers has been exaggerated due to limitations in the data used to evaluate them. When this is accounted for, their advantage over rule-based approaches is lost, leaving only their disadvantages. Rule-based systems address many of these disadvantages, and so it is clear that a combined approach, exploiting the strengths of one method to compensate for the weaknesses of the other, is what is ultimately needed.