

Evaluation Methods for Question Decomposition Formalism

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Abstract : This paper introduces two methods for the evaluation of Question Decomposition Meaning Representation (QDMR) as predicted by sequence-to-sequence model and COPYNET parser for natural language questions processing, motivated by the fact that previous evaluation metrics used for this task do not take into account some characteristics of the representation, such as partial ordering structure. To this end, several heuristics to extract such partial dependencies are formulated, followed by the hereby proposed evaluation methods denoted as Proportional Graph Matcher (PGM) and Conversion to Normal String Representation (Nor-Str), designed to better capture the accuracy level of QDMR predictions. Experiments are conducted to demonstrate the efficacy of the proposed evaluation methods and show the added value suggested by one of them- the Nor-Str, for better distinguishing between high and low-quality QDMR when predicted by models such as COPYNET. This work represents an important step forward in the development of better evaluation methods for QDMR predictions, which will be critical for improving the accuracy and reliability of natural language question-answering systems.

Keywords : NLP, question answering, question decomposition meaning representation, QDMR evaluation metrics

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