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cases	authors	• Yanaka, H. • Mineshima, K. • MartÃnez-GÃ³mez, P. • Bekki, D.	authors	• Hitomi Yanaka • Koji Mineshima • Pascual Martinez-Gomez • Daisuke Bekki		DUPLICATES	367
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	abstract		abstract	Determining semantic textual similarity is a core research subject in natural language processing. Since vector-based models for sentence representation often use shallow information, capturing accurate semantics is difficult. By contrast, logical semantic representations capture deeper levels of sentence semantics, but their symbolic nature does not offer graded notions of textual similarity. We propose a method for determining semantic textual similarity by combining shallow features with features extracted from natural deduction proofs of bidirectional entailment relations between sentence pairs. For the natural deduction proofs, we use ccg2lambda, a higher-order automatic inference system, which converts Combinatory Categorial Grammar (CCG) derivation trees into semantic representations and conducts natural deduction proofs. Experiments show that our system was able to outperform other logic-based systems and that features derived from the proofs are effective for learning textual similarity.			
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