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**Reviewer Invitation for KNOSYS-D-17-01193**

1 message

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**Jie Lu** <eesserver@eesmail.elsevier.com>

Sun, Aug 20, 2017 at 11:18 PM

Reply-To: Jie Lu &lt;jie.lu@uts.edu.au&gt;

To: Debanjan.Mahata@infosys.com, debanjanmahata85@gmail.com

Ms. Ref. No.: KNOSYS-D-17-01193

Title: Classification of Semantic Relation Using Word Embeddings  
Knowledge-Based Systems

Dear Debanjan,

This paper has recently been submitted to Knowledge-Based Systems and I would be most grateful if you could find the time to review it.

Whilst I know very well that most of us find the reviewing process something of a chore, I am sure that you will agree that it is an essential task in the maintenance of scholarly standards and we all depend upon it in relation to our own publications, so I do hope that you can agree to my request.

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I look forward to hearing from you in the near future.

Yours sincerely,

Jie Lu, PhD  
Editor in Chief  
Knowledge-Based Systems

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**ABSTRACT:**

Recent studies showed that Neural Network Language Models have been effectively and successfully applied to a variety of Natural Language Processing (NLP) tasks. Some popular methods using these models are based on discovery of semantic and syntactic regularities. Word embedding representations are notably good at discovering such linguistic regularities that could be characterized by vector offsets. In this paper, we propose a model utilizing word embedding offsets for automatic discovery of semantic relations that supports the researchers in building a lexicon. Although some studies propose averaging method for the offsets, our proposed model uses entire training offsets and is capable of training classifiers which successfully identify semantic relations for a given word pair. Our experiments show that embedding offsets regarding semantic relations such as hypernym and meronym can be easily separable and constitutes a training data set at all. A model built on them can achieve a good separation. Therefore, the offsets can simply become a classification problem. Afterwards, detection of semantic relation model can be transformed into a generation model. We conduct a variety of experiments on a large corpus of Turkish text. The word embedding vectors are trained by employing both Continuous Bag-of Words and the Skip-Gram models. We examine the effects of different setups with regard to the number of dimensions, training architecture, the size of corpus and morphological analysis. The first contribution of the study is the particular process pipeline developed in order to apply word embedding approaches to Turkish language domain. Second, identification of semantic relation is achieved through offset classification. We report that the proposed model gives a very promising and successful results for Turkish Language.

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