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**Reviewer Invitation for KNOSYS-D-17-01779**

1 message

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

Sat, Nov 11, 2017 at 7:03 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-17-01779

Title: Alignment-consistent Recursive Neural Networks for Bilingual Phrase 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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may need to look at the files in order to confirm that any supporting information you requested is present there. I look forward to hearing from you in the near future.

Yours sincerely,

Jie Lu, PhD  
Editor in Chief  
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**ABSTRACT:**

Learning semantic representations of bilingual phrases is very important for many cross-lingual natural language processing tasks, such as statistical machine translation and cross-lingual information retrieval, to overcome data sparsity and exploit semantic information. In this paper, we consider word alignments as a semantic bridge between the source and target phrases, and study how to leverage word alignments to learn better bilingual phrase structures and representations. On the base of the conventional recursive autocoder, we first propose two neural networks exploiting word alignments to generate alignment-consistent bilingual phrase structures: One is Alignment-enhanced Recursive Autoencoder which incorporates a word-alignment-related error into the final objective function; The other is Alignment-guided Recursive Neural Network which treats word alignments as direct signals to guide phrase structure constructions. Then, based on the generated bilingual phrase structures, we further model the semantic correspondences between the source and target nodes of phrase structures via word alignments. By minimizing a joint objective consisting of a recursive autoencoder reconstruction error, a structural alignment consistency error and a cross-lingual reconstruction error, our model is able to not only generate alignment-consistent phrase structures, but also capture different levels of semantic correspondences within bilingual phrases. Experiments on the NIST Chinese-English translation task show that our model achieves significant improvements over the baseline.

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