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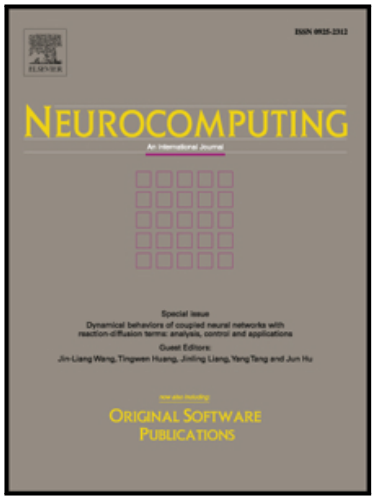

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Learning Better Discourse Representation for Implicit Discourse Relation Recognition via Attention Networks

Biao Zhang[a,c], Deyi Xiong[b], Jinsong Su[a,c,*], Min Zhang[b]

[a] *Xiamen University, Xiamen, China 361005*
[b] *Soochow University, Suzhou, China 215006*
[c] *Fujian Provincial Key Laboratory of Information Processing and Intelligent Control (Minjiang University), Fuzhou 350121, Fujian, China*

Abstract

Different words in discourse arguments usually have varying contributions on the recognition of implicit discourse relations. Following this intuition, we propose two attention-based neural networks, namely *inner attention model* and *outer attention model*, to learn better discourse representation by automatically estimating the degrees of relevance of words to discourse relations. The former model only utilizes the information inside discourse arguments, while the latter model builds upon an outside semantic memory to exploit general world knowledge. Both models are capable of assigning more weights to relation-relevant words, and operate in an end-to-end manner. Upon these two models, we further propose a *full attention model* that combines their strengths into a unified framework. Extensive experiments on the PDTB data set show that our model significantly benefits from highlighting relation-relevant words and yields competitive and even better results against several state-of-the-art systems.

Keywords: implicit discourse relation recognition, attention network, memory network, convolutional neural network

1. Introduction

Implicit discourse relation recognition (DRR) is a task of automatically identifying the internal structure and logical relation of a coherent text without discourse connec-

*Corresponding author
Email addresses: zb@stu.xmu.edu.cn (Biao Zhang), dyxiong@suda.edu.cn (Deyi Xiong), jssu@xmu.edu.cn (Jinsong Su), minzhang@suda.edu.cn (Min Zhang)