

Feature verification for Korean Semantic Role Labeling

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Abstract

A semantic role labeling is to select appropriate semantic relations between predicate and their arguments. There were many researches to resolve the appropriate semantic roles using syntactic information. However, there are the same semantic relations in spite of different syntactic relations and vice versa. So we have much difficulty to use syntactic information to resolve the ambiguities of semantic relations. In this paper, we suggest new features to select the appropriate semantic relations between predicates and arguments in Korean. We test the features that suggested at the previous studies, then choose the best ones for Korean. The proposed system shows the 76.36% (F1) in the Korean SRL corpus with the Korean Propbank¹ style originated from the Ulsan university.

Key Words: Semantic analysis, Korean Semantic Role labeling, Conditional Random Fields

1. Introduction

A semantic role labeling decides the semantic relation between a predicate and their arguments. A syntactic analysis finds the grammatical relations that are a subject or object etc. between words. In contrast, a semantic role labeling focuses on the semantic role of arguments in sentence. The arguments have close relations between predicates and are similar to 'subject' or 'object' in syntactic analysis. There were lots of researches about decision of semantic roles using syntactic information [1-5]. However, it is difficult to determine semantic roles even if using syntactic information. Examples are as follows:

- (a) 해커는 서버를 공격했다. / hae-keo-neun seo-beo-reul gong-gyeok-haet-da.
(A hacker attacked a server.)
- (b) 서버는 해커에게 공격받았다. / seo-beo-neun hae-keo-e-ge gong-gyeok-ba-dat-da.
(A server was attacked by a hacker.)

¹ Martha Palmer, Shijong Ryu, Jinyoung Choi, Sinwon Yoon, and Yeongmi Jeon, Korean Propbank, [Online]. Available: <http://catalog.ldc.upenn.edu/LDC2006T03>