

Study on characteristics of dependency between postpositional words and adjectives in noun phrases

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Kouzou Kikuchi

Improving the accuracy of dependency analysis in long Japanese sentences is a big problem in natural language analysis. Therefore, I propose a new method for analyzing dependency of I-adjectives or NA-adjectives in this thesis.

At first, in order to clarify my subject, I introduce various ambiguities of the natural-language, and the recent statistical research using a large amount of corpus.

In Chapter 3, I research dependencies of adjectives which are frequently used in the form of "<noun-1>+<adjective>+<noun-2>" in technological documents. I find seven effective dependency rules which are classified into three patterns. I apply these seven rules to the set of evaluation sentences to determine the dependency of adnominals which include an adjective, and obtained an accuracy of about 97%.

In Chapter 4, I extend adjectives and verify my rules. First, I refer to the categorization of adjectives published by The National Language Research Institute, then I pick up some adjectives from every category. Secondly, I examine my rules by using the corpus of the Mainichi Newspaper. I find that those rules can be effectively applied to additional adjectives. However, I also find that additional rules are necessary to improve accuracy. So I define two new rules and refine the original rules. My method obtains an accuracy of about 95 % for new words.

In Chapter 5, I compare my method with currently-used systems to verify the effectiveness of my method. Then, I examine the possibility of applying my method to current MT systems.