

**Design and Development of an Adaptable Frame-Based System
for Dravidian Language Processing**

The conventional methods of sentence analysis make use of a context-free grammar and a parser before proceeding further. Context-free grammars are capable to handle order and position elegantly. Hence they are suitable for processing positional languages like English. But Dravidian Languages or other Indian languages are basically free word order languages. Hence the technique of processing these languages with CFG is actually a misfit.

In this work an alternative approach more efficient in the context of Indian languages is suggested. This approach makes use of the karaka relations for sentence comprehension. An intermediate representation of the sentence is built from the karaka relations. This representation is unambiguous and general. This approach is based on the concept that the verbs convey the action part in a sentence and the karaka-vibakthi relations enable to find the respective places of the various components in the sentence. Instead of the conventional NP-VP grammars, verb boundaries are adopted as phrase markers and phrase-level representations are built to convey the complete meaning of a sentence.

The validity of the approach is established through studies on two application-oriented experiments. In the first experiment translation is done from a free word order language to fixed word order one. Here both source and destination are natural languages. In the second experiment the target language is an artificial language with a rigid syntax. The same meaning representation technique is used in both the cases. The difference is in the generation of target language sentence. Anyhow both use pattern-directed methods. The results obtained are encouraging.

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