Project and Term Paper Proposal
ANAPHORA RESOLUTION

Team members

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Introduction

“Anaphora resolution is a complicated problem in Natural Language Processing and has attracted the attention of many researchers. The approaches developed – traditional (from purely syntactic ones to highly semantic and pragmatic ones), alternative (statistic, uncertainty-reasoning etc.) or knowledge-poor, offer only approximate solutions.”[2]

Background

“Anaphora resolution (AR) which most commonly appears as pronoun resolution is the problem of resolving references to earlier or later items in the discourse. These items are usually noun phrases representing objects in the real world called referents but can also be verb phrases, whole sentences or paragraphs.

There are primarily three types of anaphora:

- Pronominal: This is the most common type where a referent is referred by a pronoun.
  Example: "John found the love of his life" where 'his' refers to 'John'.

- Definite noun phrase: The antecedent is referred by a phrase of the form "<the> <noun phrase>".
  Continued example: "The relationship did not last long", where 'The relationship' refers to 'the love' in the preceding sentence.

- Quantifier/Ordinal: The anaphor is a quantifier such as 'one' or an ordinal such as 'first'.

Continued Example: "He started a new one" where 'one' refers to 'The relationship'.

The traditional resolution techniques include:

- Eliminative Constraints: An anaphor and a referent must agree in certain attributes to generate a match. These include gender (male/female/neutral), number (singular/plural), and semantic consistency (e.g., 'a disk' is 'copied' and 'a computer' 'disconnected', not vice versa).

- Weighting Preferences: These factors are used to assign likelihood of match to the competing referents. They include proximity (of an antecedent phrase to the anaphor in the text), centering (which determines the center of attention object) and

- Syntactic/semantic (role) parallelism. As examples of the latter, consider the form "<noun-1> <verb> <noun-2> however <noun-3> <verb> <anaphor>" where <anaphor> is likely to match with <noun-2>.

There are important applications of anaphora resolution in information extraction such as "comprehending" a discourse in order to summarize it or answer questions from it."[1]

**Term Paper Subject**

Anaphora resolution with traditional methods in English.

**Project definition**

Writing a program that resolves anaphora in a given text by checking previous sentences.
References

1 - Imran Q. Sayed, ‘Issues in Anaphora Resolution’
2 - Ruslan Mitkov, ‘Anaphora Resolution: The State of the Art’