

1998 Paper 11 Question 13

Natural Language Processing

Write about *three* of the following problems, describing the issues they raise for natural language processing and possible techniques for dealing with them.

- (a) The morphological decomposition and semantic interpretation of the following words:

reuse versus *react*

thinker versus *washer* versus *beggar*

decentralisation

- (b) The syntactic ambiguity introduced by rules such as $N \rightarrow N N$ for noun compounds.

- (c) The resolution of the potential ambiguity in *List the Frenchman among the programmers who understand(s) English* through the use of agreement features.

- (d) The representation and recovery of the semantic interpretation of *Every company gave its representative a car* and the resolution of quantifier scope ambiguity.

- (e) The representation and recovery of the anaphoric and referential links in the following discourse:

John saw a house he liked. The windows were large and the door was varnished. He wanted to go inside it.

[20 marks]