
UNIVERSITI SAINS MALAYSIA

Second Semester Examination
Academic Session 2006/2007

April 2007

HET 324 - COMPUTATIONAL LINGUISTICS

Duration : 3 hours

Please check that this examination paper consists of FOUR pages of printed material before you begin the examination.

There are SIX questions. Answer any FOUR questions.

...2/-

1. Do you agree that syntax and semantics are equally important in language generation and analysis or do you agree that one aspect is more important than the other? Why? Discuss and support your answer with clear examples.

[25 marks]

2. One of the essential characteristics of corpus-based analysis is that it is empirical as it allows the analysis of actual patterns of use in natural text. What does this mean? Discuss your answer in relation to how this contributes to CALL, in particular how it could facilitate vocabulary teaching and learning.

[25 marks]

3. Discuss how NLP can enhance machine translation. Support your answer with relevant examples.

[25 marks]

4. In order for a computer program to analyse a sentence correctly, what knowledge does it need to have? What specific knowledge would you give a computer program for it to know that sentences such as *a*, *b*, *c* and *e* are acceptable and analysable whilst sentences *d* and *f* are not. Base your discussion on the sentences given and support your answer with further examples.

[a] *I gave some of the money to charity.*

[b] *I gave the stick to the dog.*

[c] *I donated some of the money to charity.*

[d] **I donated the stick to the dog.*

[e] *Jane is pursuing her career in music.*

[f] **Jane is chasing her career in music.*

[25 marks]

5. What is speech synthesis? What are some of the problems that still remain in the area? Discuss at least three of the problems in speech synthesis and their possible solutions.

[25 marks]

6. Explain the use of concordance lines and then answer the following questions based on the **Appended Data**. What are the different meanings of the word **bay** that can be found in the data? Set-up a lexicon for at least three different entries of the word **bay** based on four categories that a computational lexicon should have for analysing and generating natural language.

[25 marks]

1 Sorrento town is equally splendid , stretching out across the wide Bay of Naples to Vesuvius _ hazily outlined in the far
2 She went back down the hall into the living room , walked into the bay , and pulled back one of the net curtains . To her right
3 Wright were robbed of their £4,800 New Year 's Day takings at the Bay Horse pub in Bishop Auckland on January 2 , 1991. But the
4 nutmeg and has a strong but fragrant flavour . I combine mace with bay , especially for seasoning pork or oily fish , such as
5 I was pursued relentlessly by a pack of slavering, tabloid reporters bay'ing for blood . Let 's be honest , a good many journalists
6 Each bedroom would be reached via a staircase sited in the central bay , but headroom for a lower-storey living-room could not
7 into the clear sea , host to visiting water taxis and yachts. The bay is safe for windsurfers and performance dinghies , even
8 Usually she managed to keep the looming black cloud of misery at bay , but there were times when her thoughts would drift away
9 he lentils in water , then place in a pan with the onion , garlic , bay leaf and thyme . Pour in water , then cover with a lid or
10 and range in colour . The colours of horses and ponies are grey , bay , dun , flea bitten grey , dapple grey , strawberry roan
11 back and clapping her hands . " My guards will hold the others at bay until he has had time to get clear away . When they are
12 of Gosbank closed the door behind him and walked over to the bay window and watched Romanov run down the steps of the bank
13 truck . The task is to reverse an articulated truck into a loading bay . Anyone who has watched this being done will realise
14 acres of beautiful grounds , the hotel commands superb views of the bay and the hills . Renowned for its good food , comfort and
15 came to a standstill the passengers disembarked onto the parking bay in front of a small terminal building . D'Arcy knew Dave
16 To consider this backbone first , and include such plants as sweet bay , southernwood and rosemary. Herbs for walls , pavings
17 , in his prison_ or cage_ began to howl . His great neck . He could bay as a wolf . And he had bitten his nails so that his
18 obviously well coached and organised . The home team were kept at bay by the stout defence of Dilworth , Reeve and Sneewing, but
19 to another he leaned down to unlatch and open gates , and as the bay gelding went through the grey mare followed dutifully.
20 houses give way to occasional sandy beaches and a few hotels . The bay itself is a large natural safe sailing area , about a
21 the other horse got to Hullaloo 's quarters , a big , handsome bay , his bit covered in a white froth , his nostrils wide
22 man into a comfortable chair on the far side of the room below a bay window and took the seat opposite him . " I knew your
23 the shoulders , more kicks to the head. He managed to keep pain at bay , but only because , unconscious , he was forced to let