Two hours

UNIVERSITY OF MANCHESTER
SCHOOL OF COMPUTER SCIENCE

Interactive Technologies and Design

Date: Wednesday 28th May 2008
Time: 09:45 – 11:45

Please answer Question ONE and TWO other questions

This is a CLOSED book examination

The use of electronic calculators is NOT permitted
1. **Compulsory**
   
   a) ‘Building a multimedia system is more than just presenting a range of media types.’

   What does this quotation mean?  

   b) Engineers at Microsoft have described using a WIMP interface as ‘worshipping at the alter’. What might they mean by this? How would they suggest that computer interfaces be improved? 

   c) Describe what is meant by a ‘multi-touch interface’ and specify the dimensions along which these interfaces vary.

   d) What are the costs and benefits of the interactive properties of a multi-touch interface?

2. Many methods of interacting with computers have been suggested, apart from using the keyboard and mouse. Lip-reading is one of these. Assuming that a sequence of images of a speaker’s face is available, describe the steps that must be followed to determine what is being said.

   What additional information could be used to improve the reliability of the interpreted speech and how may this be integrated with the visual data?
3. a) Describe techniques that may be used to recognise:
   i) isolated single words (5 words)
   ii) continuously spoken words (5 marks)

b) Explain why each technique cannot be used efficiently in the other application. (2 marks)

c) Which of these techniques would you use for making a telephone answering application? Justify your answer. (2 marks)

d) How can you use this system’s functionality to your advantage, and how can you compensate for the poor quality of the data? (3 marks)

e) What additional functionality would you need to make interactions with this system more natural? (3 marks)

4. a) What are the key features of a purchasing task? Describe how interactive technologies can be used to support purchasing tasks? (8 marks)

b) Describe and justify, in words, a design for a website that aims to sell cars. (8 marks)

c) Critique the claim that virtual reality is unlikely to ever be useful for e-commerce (you do not need to agree or disagree with the claim but you should make substantiated arguments that either support or rebut the claim). (4 marks)

5. a) Describe the relevance of Kruger, Carpendale, Scott and Greenberg’s (2004) study of pairs of people solving tabletop puzzles to the design of interactive displays. (8 marks)

b) Describe how the interactive properties of a tabletop display might support two people making a joint purchasing decision. (8 marks)

c) Critique Kruger et al.’s (2004) claim that orientation is used to support collaboration, coordination, and communication? (4 marks)

END OF EXAMINATION