

Mobile HCI 2019-2020 Summer Exam

Question 1

A fast-food delivery company wants to create a smartphone application to help its delivery employees collect orders from restaurants then deliver them to customers, while traveling by bicycle. The application needs to provide navigation instructions. It should also provide convenient access to relevant information, including the order to be collected from the restaurant and the name of the customer.

Part (a)

Navigation instructions (e.g., “turn left ahead”, “turn right ahead”) could be presented using the device screen or using the loudspeaker. Identify the advantages and disadvantages of each presentation mode for this usage scenario.

(max 200 words) [4]

Part (b)

An eyes- and ears-free alternative would be to present navigation instructions using vibration from a smartwatch. Discuss why you do (or do not) think this would be a usable and useful way of presenting instructions to the delivery person.

(max 200 words) [4]

Part (c)

Identify two pieces of context information and describe how they could be used to improve interaction with the delivery app.

(max 200 words) [4]

Part (d)

How would you evaluate an implemented version of the app, to determine if it is usable and successfully supports the delivery employees? Justify your decisions.

(max 500 words) [8]

Question 2

A museum would like to create a mixed reality experience for an exhibit about dinosaurs. They would like to use virtual visual content to enhance the visitor experience while inside the museum.

Part (a)

The museum staff are unsure if they should create an augmented reality smartphone app, an app for augmented reality glasses, or a virtual reality experience. Which of these mixed reality experiences would you recommend the museum creates for this exhibit? Justify your answer, focusing on the museum usage context.

(max 500 words) [6]

Part (b)

Discuss the advantages and disadvantages of using exocentric content placement for the mixed reality experience you chose in your answer to part (a).

(max 500 words) [6]

Part (c)

Compare augmented reality glasses and virtual reality headsets in terms of their potential social acceptability and safety concerns. You should consider their use in the museum as well as other public spaces (e.g., train, café, park).

(max 500 words) [8]

Question 3

In recent years, new cars have been released with touch-screen interfaces, mid-air gesture interfaces and speech interfaces. These new user interfaces are typically used to interact with in-car computer systems (e.g., for music playback, navigation, air conditioning, etc).

Part (a)

Discuss and compare the advantages and disadvantages of these three types of user interface, in the context of interacting with an in-car system.

(max 1000 words) [12]

Part (b)

Do you think these new interaction methods will have a positive or negative effect on the driver experience? Write a short essay justifying your opinion.

(max 500 words) [8]