Department of Computer Science and Engineering

College of Engineering, University of Nevada, Reno

CS 791 Special Topics in Computer Science: Human-Computer Interaction

Study Required for Midterm Test #1

October 23, 2018

Version 2 (complete)

This written, closed-book, 70-minute test will take place on **Tuesday, October 30, 2018** in SEM-257 from 12:00 pm (regular classroom and time). The test weights 12% in the course grade.

A **Chapters Required** from the textbook *Human-Computer Interaction: An Empirical Research Perspective* by I. Scott MacKenzie:

Chapter 1	HISTORICAL CONTEXT
Chapter 2	THE HUMAN FACTOR
Chapter 3	INTERACTION ELEMENTS

Note: from items A above, **Sub-section 1.6.2** The psychology of HCI (1983); the text on pages 78-79 related to **Figure 3.9** (Google Street View); and **Section 3.6** More about degrees of freedom are not required.

B **Research papers (3 in total),** selected from those presented by graduate students, each with 3 questions.

Paper 1 [Capilla 2014] Daniel Martinez Capilla, Sign Language Translator Using Microsoft Kinect XBOX 360. Selected by Sangam Shrestha. Note: publication year estimated.

Question 1. Consider the [Capilla 2014] paper. What were the goals of the Sign Language Translator presented in this paper?

Question 2. Consider the [Capilla 2014] paper, focused on a sign language translator using Microsoft Kinect Xbox 360. Explain what the DTW algorithm is and why it was used in this paper. What newer versions of the DTW algorithm were used?

Question 3. Consider the [Capilla 2014] paper, focused on a sign language translator using Microsoft Kinect Xbox 360. Summarize its results, conclusions and future work.

Paper 2 [Pfeuffer et al 2017] Ken Pfeuffer, Benedikt Mayer, Diako Maredanbegi, Hans Gellersen, Gaze + Pinch Interaction in Virtual Reality 2. *Proceedings of the 5th Symposium on Spatial User Interaction*, pp. 99-108, Brighton, UK, October 2017. Paper selected by Isayas Adhanom.

Question 4. Consider the [Pfeuffer et al 2017] paper. Describe the basic idea behind the Gaze+Pinch technique. Explain why the authors believe this is an original approach.

Question 5. Consider the [Pfeuffer et al 2017] paper. Indicate and explain the design considerations taken into account for Gaze + Pinch interaction in VR?

Question 6. Consider the [Pfeuffer et al 2017] paper. Describe one of the applications of Gaze + Pinch presented by the authors in Section 6 of the paper. You can choose any the four example application cases presented there. Describe your views on the Gaze+View technique and explain what interested you in the application example that you selected.

Paper 3 [Kao et al 2015] Kao, H-L, Dementyev, A., Paradiso, J.A., and C. Schmandt. NailO: Fingerprints as an Input Device. *Proceedings of CHI-2015*, pp. 3015-3018, Seoul, South Korea, 2015. Paper selected by Frank Mascarich.

Question 7. Consider the [Kao et al 2015] paper. Describe the three main design themes that must be realized in order to afford usability in the form of cosmetic extensions. Also, briefly indicate the main contributions of the paper, as summarized by the authors.

Question 8. Consider the [Kao et al 2015] paper. Briefly explain the purpose of NailO (3-6 lines). Also, provide details of the hardware and software used in the NailO prototype.

Question 9. Consider the [Kao et al 2015] paper. Describe the two applications (use cases) of NailO presented in the paper.