Eric Paulos Prelim Fall 2020 Questions

QUESTION 01

Kiesler, S., Siegel, J., & McGuire, T. W. (1984). Social psychological aspects of computer-mediated communication. American Psychologist, 39(10), 1123-1134. http://dx.doi.org/10.1037/0003-066X.39.10.1123

Describe the major contributions of this paper in terms of why it is novel and what it was trying to advance within HCI research?

Discussion on role of social psychology with HCI and in particular how it can be used to study effects of CMC on decision making, group consensus, leadership, equity, efficiency of decision making, and culture at large.

There had been previous research in this area of CMC. However, most of it focused on vary different aspects of evaluation. What were examples of this previous research focus?

Mostly focused on work tasks around technology — efficiency based on cost, and technical capabilities.

What were the primary forms of CMC studied? Can you describe the study briefly and any findings/results?

Face-to-face, "computer conference" (i.e. text based chat) non-anonymous, and anonymous.

Can you recall any connected papers in the HCI reading list that address issues raised in this paper? Such as non-verbal cues?

Jim Hollan and Scott Stornetta. 1992. Beyond being there. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '92), Penny Bauersfeld, John Bennett, and Gene Lynch (Eds.). ACM, New York, NY, USA, 119-125. DOI: https://doi.org/10.1145/142750.142769

Jonathan Grudin. 1994. Groupware and social dynamics: eight challenges for developers. Commun. ACM 37, 1 (January 1994), 92-105. DOI=http://dx.doi.org/10.1145/175222.175230

Eric Paulos and Elizabeth Goodman. 2004. The familiar stranger: anxiety, comfort, and play in public places. In Proceedings of the SIGCHI Conference on Human Factors in

Computing Systems(CHI '04). ACM, New York, NY, USA, 223-230. DOI= http://dx.doi.org/10.1145/985692.985721

Does this work apply to any today's CMC systems and designs? How would you use it in the design of a new system for example using AR or VR communication?

QUESTION 02

Karl Willis, Eric Brockmeyer, Scott Hudson, and Ivan Poupyrev. 2012. Printed optics: 3D printing of embedded optical elements for interactive devices. In Proceedings of the 25th annual ACM symposium on User interface software and technology (UIST 2012). Association for Computing Machinery, New York, NY, USA, 589-598. DOI:https://doi.org/10.1145/2380116.2380190

Describe the major contributions of this paper in terms of why it is novel and what it was trying to advance within HCI research?

Use of 3D fabricated light pipes for sensing, display, and illumination. Also focus on printed vs assembled designs. Finally, use of internal structure as part of fabrication design process.

How are the designs in the paper fabricated?

Use of Python and Rhino to design light pipes and printed using hollow internal forms on SLA printer using specialized optical materials.

Can you recall a few of the display designs made possible and demonstrated in this paper? How do they function?

Mobile projector displays

Mobile touch sensing

Tangible displays

What are some of the types of internal displays enabled bu this technique and how are these displays created?

Volumetric displays - projector with depth mapping
Internal patters - LED offset
Internal text - LED below with selected air pockets illuminated

Can you recall some of the sensing technique enabled by this technique and how they were achieved?

Push/pressure

Rotation
Linear movement
Acceleration

What are some of the limitations of this research?

Distance of light pipe
Curvature of light pipe
Model thickness
Print directions
UV exposure
Surface quality (extra sanding required)

This paper draws on techniques from another paper in our HCI reading list. Do you recall this paper?

Frustrated total internal reflection (FTIR) base sensing

Jefferson Y. Han. 2005. Low-cost multi-touch sensing through frustrated total internal reflection. In Proceedings of the 18th annual ACM symposium on User interface software and technology (UIST '05). ACM, New York, NY, USA, 115-118. DOI=http://dx.doi.org/10.1145/1095034.1095054