Assignment P5

Cleo Zhang

yzhang3761@gatech.edu

1 QUESTION 1 - COMPUTER SCIENCE PROMPT

The Online Master of Computer Science (OMSCS) program offered by the Georgia Institute of Technology is an excellent example of open online education. This section will first describe the positive effects of such programs, followed by discussing potential negative effects. Then this section will talk about the possible solution to preserve the positive impact but diminish the negative effects.

1.1 Positive effects

Asynchronous Learning - this learning mode allows full-time workers to gain the necessary knowledge for their continuous career growth. With good course planning, students can better learn (online) by application (in work), which benefits academic and career prospects. Asynchronous learning also introduces the time flexibility of learning. First, students do not need to pause their careers to brush up their knowledge and pursue a degree; secondly, such flexibility allows students to make full use of their spare time and study if they want.

Accessibility - Such online programs allow students to attend classes and access learning materials from anywhere with Wi-Fi. The accessibility of such online programs is increased by eliminating geographical restrictions. Plus, the cost of online programs is usually more affordable than an in-person one, which helps bridge the education gap caused by wealth inequality.

1.2 Potential negative repercussion

Lack of Student Engagement - Education is about gaining knowledge plus networking, communication skills, and exploration outside of their primary interest. Due to the nature of online programs, students are limited to online interactions with their peers, and the communication is primarily texting.

Exploring outside their specialties can be tricky because the learning resources are only available when the course is registered.

Collaborative learning - Since students are potentially from different time zones, collaborative learning can be difficult for students to practice and for staff to manage. For example, five students are working on one school project, and text-based communication can be the only way to collaborate because of time differences. Team members may not get instant responses, which often leads to low collaboration efficiency.

1.3 Structures to preserve the positive effect while limiting the negative effect

Local in-person study groups - schools or organizations can encourage students to form local study groups and potentially allow them to work on school projects together. In this way, texting can be converted to in-person communication, diminishing the time zone issue.

Host local events - hosting local events for an online study community can be helpful for students to experience the "on-campus life" and grow their local connections. Such events can also provide students with a platform to share learning and career resources with others and for their fellow students to explore. Local job opportunities can be created from within such events as well.

2 QUESTION 2 - COMPUTER SCIENCE PROMPT

Facebook (or Meta?) is an area that I regularly encounter where political motivations drive the technology design. Facebook is an online social platform that allows users to share their life online and network with other users with their real names.

2.1 Description of the stakeholders in that area

Government - a government can be the governing body of a nation, state or community. The motivation of this stakeholder is to ensure the content and behaviour are regulated by law.

End users - end users are the people who are using Facebook in their everyday life. The motivation of this stakeholder is to share their thoughts and interact with other users on Facebook.

Software engineers - software engineers are Facebook employees that are working towards this social platform. This stakeholder's motivation is to build new features upon the existing platforms while ensuring service quality from a technical perspective.

Partner companies - partner companies with Facebook, are third-party companies that run business with the Facebook platform. Their motivation is usually to promote their own business on Facebook or make full use of the services provided by Facebook.

2.2 Three ways those motivations are explicitly affecting the design of the technology in that area

Not all stakeholders' motivations are directly political, but the influence or outcomes can politically affect the design of the technology. Below lists three ways of how those motivations are explicitly affecting the Facebook platforms.

Government - this stakeholder's motivation affects what kind of content is allowed on the Facebook platform. For example, uploading a video including violence will not be approved by Facebook because such content breaks the community rules.

End users - end users' motivation of social networking reforms the software design. For example, multi-level friend connections on Facebook results in slow data fetching from traditional APIs. To resolve this problem and better align users' motivation, Facebook created GraphQL middleware to speed up the data fetching and optimize the communication between frontend and backend.

Partner companies - the motivation of advancing their business usually requires an explosion of their business. Facebook will need to consider this need when designing the layout of the frontend view.

3 QUESTION 3

3.1 All Work and No Play? Conversations with a Question-and-Answer Chatbot in the wild

This paper reports users' interest when interacting with a conversational agent (CA) through a lens of statistical modelling. The authors of this paper are Q. Vera Liao, Muhammed Mas-ud Hussain, Praveen Chandar, Matthew Davis, Yasaman Khazaeni, Marco Patricio Crasso, Dakuo Wang, Michael Muller, N. Sadat Shami, and Werner Geyer.

3.1.1 *Summary*

This paper investigates what areas users are interested in to have an enjoyable conversation with a CA. By conducting surveys and collecting the answers to the below questions for CA development, we want to potentially extend the functionality of a CA, fulfilling the information needs to users' enjoyment of talking with CAs.

- (RQ1) What kinds of conversational interactions did users have with the QA agent in the wild?
- (RQ2) What kinds of conversational interactions can be used as signals for inferring user satisfaction with the agent's functional performance and playful interactions?

RQ1 - the main areas of conversational interactions are feedback giving, chit-chat about the agent, agent ability checking and communication utterances.

RQ2 - on usage satisfaction: opportunities and caveats in conversational feedback, implicit complaints and formal QA as signals of functional pleasure; On being happily playful: playful chit-chat, agent-oriented conversations and casual testing.

The experiment results uncover rich forms of interest areas that can be used to develop better conversational agents with which users can enjoy their conversation.

3.1.2 *Why do you find this paper interesting?*

I have a CA at home, and I interact with it daily. The abstract of this paper drew my attention because (1) I can see myself in the conversation context; (2) I am interested in seeing the overlaps of my interest area and the experiment results from this paper.

3.2 Computing Students' Learning Difficulties in HCI Education

This paper reveals eighteen kinds of difficulties that students may face when learning HCI design through qualitative analysis. The authors of this paper are Alannah Oleson, Meron Solomon and Amy J. Ko.

3.2.1 *Summary*

This paper addresses the difficulties students face when learning HCI design by conducting two qualitative studies of surveys and interviews with both computing students and educators.

Analysis results can be categorized into four major themes: (1) difficulties around how to do design work; (2) difficulties around project management skills; (3) difficulties around the weakness of design problems; (4) difficulties around distorted perspectives.

With a deeper understanding of the difficulties students may face from the above categories, we can further think about how to provide students with a more efficient HCI education.

3.2.2 *Why do you find this paper interesting?*

As a student who registered Interactive Intelligence as her specialty in this program, this paper can be relevant to my own learning experience. Also, I would like to compare my own experience to this paper and potentially look for a solution to the learning difficulties I may be facing in the future.

4 QUESTION 4

4.1 Creativity and Cognition 2019

The title of this paper is CrowdMuse: Supporting Crowd Idea Generation through User Modeling and Adaptation. This paper was written by Victor Girotto, Erin Walker and Winslow Burleson.

4.1.1 *Summary*

This paper introduces a system called CrowdMuse, to address the value of collective brainstorming with the adaptation of individuals' inputs. This system involves two main components - idea workspace and solution space. Based on the evaluation of this system, this paper also discusses the findings for adaptive creativity support system design.

Research Method - the CrowdMuse system is evaluated by two interactive online studies: (1) whether the combination of the two adaptive features improves brainstorming quality; (2) how randomized inspiration/solution space and adaptive inspiration/solution space affect the brainstorming.

Conclusion - based on the findings from the above studies, this paper concludes that given an appropriate categorization, adaptive inspiration positively affects the breadth of ideation. However, the adaptive solution space does not affect the study results, and adaptations do not affect depth and fluency.

4.1.2 *Why do you find this paper interesting?*

This paper is titled as Best Paper Award by the 12th conference on Creativity & Cognition 2019, and I am interested in why this paper is the best. Besides, the "User Modeling" keyword looks relevant to the Ed lectures, and I wonder if there is any connection between the lessons and this paper.

4.2 The 24th ACM Conference on Computer-supported Cooperative Work and Social Computing

The paper title is Re-place-ing Space: the Roles of Place and Space in Collaborative Systems. The authors of this paper are Steve Harrison and Paul Dourish.

4.2.2 *Summary*

This paper highlights the distinction between "space" and "place" and discusses how a "place" instead of a "space" can support the computer-supported cooperative work (CSCW) design. This paper starts with the current use of space in collaborative systems, then the related notation of place, the comparison of their roles in existing systems, and finally, the consequences for future CSCW design.

Based on the findings from this study, we understand that:

- It is a sense of "place" that frames people's behaviours in everyday experience;
- Non-spatial environments exhibit placeness as well;
- Understanding how people engage in real interactions and doing the real work in a virtual environment is critical to support the duality of space and place.

4.2.3 *Why do you find this paper interesting?*

I noticed that this paper was published on November 16, 1996, but the title looks relevant to today's work from home. More interestingly, the conference was held and entitled this paper with a Lasting Impact Award in 2021 - 25 years after it was published. I am curious to see how this paper has impacted the world over the last 25 years.