Assignment P5: CS6750

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QUESTION 1

OMSCS comes with a great set of positives and negatives to the students who take part in this and to society at large. Being an online program designed for working professionals to be taken remotely instead of an on-campus program adapted to be online like many other 'Online programs'. OMSCS provides a unique offering that is largely self-paced (with deadlines), affordable, and most importantly **flexible.**

As the program is specifically designed to be online so lectures are pre-recorded and available for viewing from day 1. Students can go through the lectures to see if they are interested in the course before they commit to it. Students can finish the degree at their own pace within 6 years. They can also be viewed asynchronously which offers an additional level of flexibility to a new demographic. The average age of an OMSCS is 33, and as of fall 2020, 36.6% of the students enrolled are international students. Allowing students such as myself to receive a world-class education remotely without breaking the bank and moving halfway across the planet to do so.

The cons for this program, when compared to other online degrees, are none. As OMSCS is the biggest online degree program it has its own student community which makes it the best online degree program by a mile. But, when compared to an on-campus program the main issue I've noticed is **communication** such as with group creation which arises during group projects. Being online, it is harder to coordinate online and even more so when they are working professionals in different time zones. It's a hit or miss when trying to find teammates with similar ideas and complementary skillsets with limited communication. Additionally, one does not get a chance to talk to the TA's or Professor but communicate through forums which is less un-intuitive as the primary methods are through text. The forums are also pretty crowded which makes it hard to filter out content.

I think **compartmentalization** would be a great alternative to fix the communication problem. Once the student community of a particular area gets sufficiently large, GT could open local student chapters which would enable students to meet each other, socialize and network easily. Participation would be

voluntary but with extra credit. This would stimulate a campus-like environment for learning where students can meet to take classes together, or just have a sense of community. Additionally, it would be great if the professors and TA could host a virtual fireside chat with students over a video call once a semester ends or somewhere in between when time permits. This would allow us to get to know the teaching staff better and form a bond between the students and the teaching staff in addition to the Piazza forums.

QUESTION 2

The area where political motivations determine the design of technology is smartphone innovation. The stakeholders in this system consist of the Phone manufacturer, the application developers who make individual applications, and the end-user who utilizes this phone.

Beginning with the **manufacturer of the phone**, due to intense competition in the hardware space most hardware manufacturers operate on razor-thin margins. They are motivated to create a compelling product that will attract customers and keep them loyal to the brand. Additionally, they are also motivated to add bloatware to phones and sacrifice user privacy to bring in additional revenue to pad the bottom line. Most manufacturers often find themselves doing a balancing act between users and application developers. *They cannot make their phone too open to sacrifice user safety but also not too close so as to drive application revenues away.* Even vendors like Apple which regards itself as the paragon of online privacy takes in money from Google to set its search engine as default along with the Apple Tax it charges for its AppStore. The Android community on the other end of the spectrum prides itself on its openness also breaks warranty if users change ROMs or disable inbuilt bloatware which reduces performance or takes away CPU resources which changes the interface politically. *They are also incentivized to make hardware limitations like removing the headphone jack to boost accessories sales.*

The **application developers** who develop apps for phones are motivated to increase screen time spent by users. They gather data to perform analytics on their users and *approach hardware manufacturers to install their software as bloatware to increase exposure and discoverability*. They provide the user with a service but their motivations do not lie in the welfare of the user but the increased screen time to increase add revenue or probability of renewing subscription to their service. *Owing to the structure of the online economy, the application design is politically changed to constantly be stimulating and addictin*g.

The third stakeholders are the **users**. The motivation of the user ranges from an increase in productivity, an increase in leisure, or better connectivity to friends and family. The user is driven by a need to maximize value for the amount they spend. This could translate to trying to get the most bang for their buck or prioritizing reliability, customizability, or other variables. The users also vary in their technical literacy. So the bloatware would enable them to have default applications that perform a task rather than believing the said task cannot be performed on the Phone. My Samsung S9 by default comes with MS Office built-in which can only be disabled not deleted. So I can open docs file by default without downloading additional applications (similar to pages on iPhone). *The sheer diversity of the user size allows for the interface to change politically as they allow for vendors to add in bloatware to provide functionality which a reasonably large section of users would find useful simply by the power of defaults.*

QUESTION 3

The first paper that I would like to discuss is the ***Considering Parents in Coding Kit Design: Understanding Parents' Perspectives and Roles*** (CHI 2020) written by ***Junnan Yu, Chenke Bai, Ricarose Roque*** who are researchers at the University of Colorado, Boulder.

As students are learning to code at a younger age, many coding kits (toys and apps) have emerged to do so. However, parents who support these kids learning is less understood. This study looks into parents who obtained these coding kits for their young children and their experiences and motivations in doing so. Parents play a variety of roles in this process as a teacher, collaborator, learning broker, gatekeeper, and spectator, the parents provided positive feedback on the kits but reported concerns about their lack of programming knowledge to help children. The paper reflects on implications for coding kit design based on parents' perspectives and roles, such as including design features to support parents' roles and sibling play. The paper inspires coding kit design that considers the important roles and perspectives of parents to better support children's exploration with computational thinking.

I chose this paper for this assignment as in India, there are predatory companies such as Byju's and WhiteHat Jr trying to peddle expensive coding courses to parents not to instill the love of programming in kids but with the promise of future riches. Companies like them are trying to denigrate the entire field of

computer science into one large cash grab or get rich quick schemes instead of instilling the love of computing in them. Designing coding kits with parents in them would make the experience better for the kids as it would focus on computing and prevent predatory companies from taking advantage of gullible parents.

The second paper that I would like to discuss is ***If I Hear You Correctly: Building and Evaluating Interview Chatbots with Active Listening Skills*** wrote by ***Ziang Xiao1*, Michelle X. Zhou2, Wenxi Chen3, Huahai Yang3, Changyan Chi3*** from researchers at the University of Illinois Urbana-Champaign and Juji Inc.

Interview chatbots engage users in a text-based conversation to draw out their views and opinions. A lot of currently available chatbots do not provide an engaging user experience and generally elicit significantly lower quality user responses from users to complex and open-ended questions. The researchers used publicly available practical AI technologies to build effective interview chatbots that enabled interview chatbots with a subset of active listening skills (ie the ability to comprehend a user's input and respond properly). The prototype combines a rule-based chatbot builder with data-driven models to power interviews with active listening skills. This paper experimentally proves from a live evaluation of 206 users between chatbots with and without active listening skills that it is feasible to use existing and practical AI technologies to build effective interview chatbots with active listening skills and that chatbots with active listening skills are more effective at engaging users and eliciting quality user responses compared to those without such skills. The paper presents practical design implications for designing interview chatbots, hybrid chatbot platforms, and empathetic interview chatbots.

This paper is of particular interest to me as I'm developing a chatbot at work to guide users around commonly occurring issues and how to raise admin requests instead of pinging members of our team directly. But most chatbots operate in a linear fashion which ends up in most users getting frustrated and pinging us anyway. If chatbots could be integrated to understand contexts or perform conversations in a non-linear manner it would allow us to automate a large portion of our tasks and focus on the more pressing issues.

QUESTION 4

The first paper that I would like to discuss is ***But does Pikachu love you?: reproductive labor in casual and hardcore games*** written by Anastasia Salter, Mel Stanfill of the University of Central Florida Orlando, and Anne Sullivan from Georgia Institute of Technology presented at the International Conference on the Foundations of Digital Games (2019).

This paper studies the Geek Cultural battleground between hardcore gamers and casual gamers in the Pokemon Franchise. The new Pokemon game, "Let's Go, Pikachu" has faced backlash for its perceived casualization of the franchise. The researchers played the game to sense how its mechanics & narrative changed relative to earlier iterations of the franchise, They also collected both user and professional reviews from Metacritic. Professional reviews were far more favorable to the game compared to user reviews. The data were analyzed both qualitatively and quantitatively. The researchers found a recurring theme of adult men asserting themselves as central fans of children's media asserting that fans who have liked the franchise for a long time be continued to cater to what they liked about it long ago. Nostalgia has become an entitlement and the reviews boiled down to "If I don't like it, it is objectively bad", "If I don't like it, it's not the main series title", "If I don't like it, it's casual." . The mechanics of the game has also shifted from a grinding model to reproductive and care work. Despite the intense backlash from the hardcore fans, both games broke sales records for the switch console. So this is part of a larger trend in the industry where games are designed for target demographics instead of the larger evolving fanbase and game design has shifted to welcome them.

I found this paper interesting as gatekeeping in videogames is something I've faced a lot. Toxic game communities are almost cliche and scandals like gamergate speak volumes about the toxicity within the gaming community. As a casual gamer, I've faced a lot of gatekeeping from the so-called 'hardcore' gamers and the mechanics and psychology of gaming and how it's related to Pokemon: Let's Go! Provides an interesting problem for game designers who traditionally targeted a specific demographic (young children and families for instance) but also now is faced with backlash from a loyalist fandom who expects to be targeted even though they have clearly aged out of the target demographic.

The second paper that I would like to discuss is the ***Is Deafness a Disability?: Designing Hearing Aids Beyond Functionality*** written by Patrizia Marti and Annamaria Recupero of the Department of Social, Political and Cognitive Sciences. University of Siena, Italy presented at the Creativity and Cognition Conference (2019).

This paper explores the issues relating to the design of assistive technology for people with hearing impairment. More than just the functional goal of hearing, hearing aids should be designed to address their emotional and socio-cultural needs. The paper calls for a shift in the design model from a medical model that seeks to cure them to a socio-cultural model. Assistive technologies in the form of wearables often address a specific need but are brought to market with minimal consideration of the cultural meaning, social impact, stigmatization, and design aesthetics. . Deaf people find themselves at a disadvantage when attempting to live and function in a hearing-oriented society that does not accommodate their needs, but at the same time, they are proud to define their condition as membership to a cultural and linguistic minority rather than a disability. The researchers performed a participatory design approach where they tried to address the complex entanglement of needs and desires of deaf people. The researchers found that most hearing aids were poorly designed without taking into consideration the aesthetics, self-expression, and identity of the users' and it affects both positive attitudes and concerns. Additionally, the current design of hearing aids does not take into consideration gender preferences making them unattractive for both male and female targets. The researchers conducted two workshops for designing prototypes and they came up with several prototypes taking forms such as rings, necklaces, and other jewels. The smart jewels were generally well-received by the deaf people who participated in the study. The themes that developed from these studies are

- That generalization, extrapolating user preference to a broader population, should be approached with extreme caution. Different people with different needs are usually labeled as deaf.
- Tacit knowledge, giving insight into the user experience of impairment, can be revealed through discussion and through experiencing working prototypes.

- Users suggesting "solutions" can limit the designer in exploring alternatives.

I found this paper interesting as the one point that is reiterated throughout the course is that '***You are not your user '.*** When designing physical aids we design them sorely for the purpose of functionality and not aesthetics. The ugly specs trope were practically a cliche until a renaissance of new eyewear design. Other aspects like gender also played a role in the creation of usable aids that make our spaces more inclusive for all.

5 APPENDICES

1. ***Considering Parents in Coding Kit Design: Understanding Parents' Perspectives and Roles*** (CHI 2020) written by ***Junnan Yu, Chenke Bai, Ricarose Roque***

2. ***Hear You Correctly: Building and Evaluating Interview Chatbots with Active Listening Skills (CHI 2020)*** written by ***Ziang Xiao, Michelle X. Zhou, Wenxi Chen, Huahai Yang, Changyan Chi***

3. ***But does Pikachu love you?: reproductive labor in casual and hardcore games*** written by ***Anastasia Salter, Mel Stanfill,*** and ***Anne Sullivan*** presented at the ***International Conference on the Foundations of Digital Games (2019).***

4. ***Is Deafness a Disability?: Designing Hearing Aids Beyond Functionality*** written by ***Patrizia Marti a***nd ***Annamaria Recupero*** at the ***Creativity and Cognition Conference (2019) .***