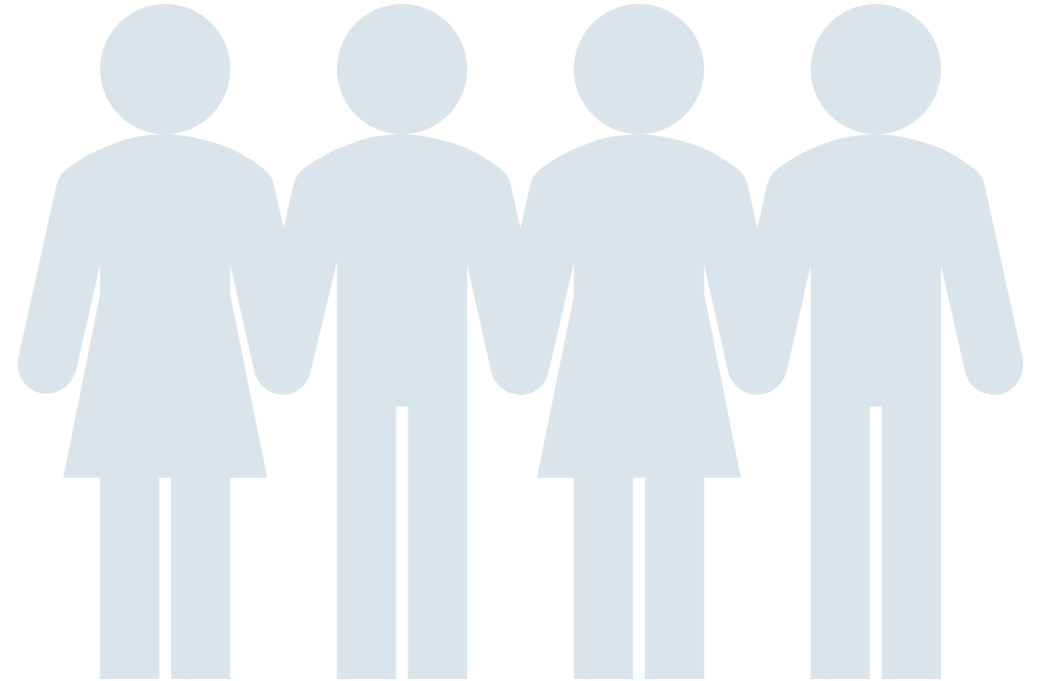# Digital Cultural Heritage Engagement

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Executive Summary

As technology continues to pervade all areas of life, it is critical to assess the <mark>effectiveness of technology to meet the needs of users</mark>; specifically, the ability to capture an accurate context of people in order to integrate technology seamlessly. America, as a multicultural nation with many different socio-ethnic backgrounds, presents an interesting challenge where the lines between cultures continue to blur. This analysis explores the concept of Digital Cultural Heritage Engagement to highlight **the ways in which technology can work within the constructs of existing cultural heritage**, preserving human elements and bridging the gaps into the modern age.

- Bridging the gap (traditional practices and habits vs. modern technological processes and procedures)

- The effects of technology on social groups (the evolution of cultural practices)

- Analyzing cultural qualities from existing data

Highlights

Like most HCI solutions, cultural applications of technology are very customized and personal to the users. Many of the papers spoke to this point, highlighting the need for **accurate historical narratives** [1] and **subtle and emotional communication** [2]. In contrast to this, there was also a need for individual control of experiences, evident from **preferences for self-exploration** [1] and **user-controlled data sharing** [6]. The central themes encourage connection and community and require technology to be able to **facilitate emotions, if understanding emotion is not possible**. This is emphasized in the analysis of Clarifai where the issue is raised that **"machines lack lived experience and thus, they have not been taught social norms"** [3]. A follow-on point is mentioned about, **"if our goal is human likeness, we must admit that social stereotyping is a reflection of this engineering goal, and that it must be managed rather than eradicated."** [3] It is an intriguing perspective that social stereotypes are being described as an inherent human nature, whereas, in day-to-day life, media in public forums attempt to be as politically correct as possible. Under the hood, it would seem as though **some form of cultural stereotyping is necessary to ensure technology meets the needs of user**.

Highlights 2

Perception is an important consideration in integrating technology; yet, it's difficult to measure. [6] attempts to qualify UTAUT constructs borrowing from work in 1989 [11], focusing on the **perceived notions of usefulness, trust, risk, enjoyment and compatibility**. This perception may also not be a reliable source of truth due to **filter bubbles and echo chambers** [7] that are intensified in online settings. A sobering conclusion was that current polarization metrics cannot effectively distinguish between polarization behaviors [7]. Because online data is not reliable and reliable data cannot be distinguished from unreliable data, the **most effective source of input** for technological development remains to be real user interactions, via questionnaires, interviews, think alouds and co-creating spaces. [8] has found that Twitter has provided a platform to give the Black community a space for its voice. However, even when using online platforms, having **direct connections with context** is key in extracting meaningful information. With all things considered, there are applications where purely machine data can be coupled with human data to provide some insights into technological developments. [5] talks about how satellite imagery in union with survey data provided more accurate results in determining poverty lines. **The connection between financial status and technological adoption being very closely linked is common knowledge.**

Gaps

While ethical considerations are discussed, there is a gap in comprehensive guidelines or frameworks for ethical AI development and deployment, especially in cultural heritage and social media contexts. Obtaining a clear source of truth remains difficult and validating information presents unique struggles. Many of the studies were short-term efforts within a timeframe of months, between January and February 2021 [6] or between January 1, 2022 and July 31, 2022 [7], Between May 2022 to Jan 2023 [4] or one time studies [1]. It demonstrates *short-term solutions to short-term problems*; however, understanding larger trends is not as feasible. Cultural preservation is of specific importance because *if it is not tracked over longer timeframes, it is not possible to know what gets lost along the way*. The concepts of *managing social stereotyping* [3] and *understanding perceived notions* [6] are introduced; however, there's a gap in addressing the specific needs and perspectives of diverse cultural groups, especially in technology design and implementation. There's potential for more research on *user education and awareness regarding technology use*. It was interesting to see that participants were "given two minutes to become familiar with" [2] KEPEIN and that was deemed enough time. *Some technological familiarity must have been assumed.*

Future Research Directions

Defining the ethical grounds to allow social stereotypes and filter between them.

- By exploring the conditions that enable the acceptance of certain stereotypes, trust in technology can be increased, **such that technology is not expected to meet unrealistic social expectations**

- technology specifically designed for certain social groups

- more robust technological solution with different modes that tailors experiences to the context

Integrating and/or updating existing technologies to meet cultural needs (as opposed to creating additional technology)

- creates more financial burden to maintain new technology

- is there anything that can be done to **improve technology integration when it may not have been designed for a particular purpose?**

Analyzing how to provide transparency to increase trust in and usefulness of technology while reducing the risk of destroying important cultural references

- concerns of privacy and trust in technological systems and their providers/maintainers

- **Without exposing all the messy implementation** and technical details with users, how can transparency be implemented to **allow users to understand the full lifecycle of their interactions with technology?**

References

- Complete Analysis can be found here,
  - (along with a copy of full assignment)
  - https://github.com/nickumia/nlp-web/issues/109