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## ADORKABLE AI: HOW ALGORITHMS SHAPE LIBRARIAN STEREOTYPES IN BRAZIL AND THE US

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### Background

This paper aims to analyze AI-generated depictions of librarians and examine how much they align with stereotypical portrayals of the profession. Previous research has assessed gender biases in large language models (LLMs), showing that occupations such as secretary and nurse are disproportionately associated with women (Kotek et al., 2023). Studies on AI-generated images have also investigated the depiction of medical professionals, concluding that they are predominantly represented as white males (Currie et al., 2024). In the field of library and information studies, research has explored the portrayal of librarians in movies (Tevis & Tevis, 2005), the press (Shaw, 2010), social media, and search results (Singh et al., 2020). However, no studies have examined how AI-generated images depict librarians. This work aims to fill that gap while also contributing to the broader literature on the representation of librarians in media and culture. The guiding research question is: *"How do AI-generated images depict librarians?"* Our goal is to examine these images to see if they uphold stereotypes. Furthermore, we analyze portrayals in American English and Brazilian Portuguese.

The portrayal of the librarian is problematic because it heavily depends on stereotypical notions of women as nurturing and caring (Garrison, 1972) and the dominant whiteness associated with intellectualism (Collins, 1986). Historically, librarians are depicted as women wearing glasses with timid or stern demeanors, often in buttoned long-sleeved blouses (Kneale, 2009). They don't laugh, prefer silence, love books, and endure humanity (Kneale, 2009). This figure is viewed as intimidating (Radford, 2001). In contrast, the modern librarian is often described as a "cat lady" with a friendly demeanor (Gambrell & Brennan, 2014), where a pet cat enhances perceptions of kindness (Schlesselman-Tarango, 2017). The modern "adorkable" librarian (Schlesselman-Tarango, 2017) still loves books, often wears glasses, and favors cardigans enhanced with stylish bangs and cheerfulness. This image suggests

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neutrality and harmlessness, with today's librarians characterized as helpful, caring, service-oriented, and cool (Yontz, 2003; Schneider, 2007; Annoyed Librarian, 2007; Rabey, 2007). When defining a librarian, one might envision "...a group of 'white women in sensible shoes'" (Espinal 2001, p. 146). Typically, librarians are female and white, protecting knowledge and enforcing library values despite meager compensation.

The stereotypes listed above are typical representations of librarians. In this work, we adopt the definition of stereotypes proposed by Ashmore and Boca (1981), which is based on beliefs about the characteristics of specific groups. Stereotypes serve as cognitive shortcuts that help individuals quickly assign meaning and categorize unfamiliar people and things. However, while not all stereotypes are negative (Voci, 2024), even those perceived as positive (Kay et al., 2014) can have consequences due to oversimplification. The effects of stereotypes include segregation based on perceived similarities and the reinforcement of biases (Dawar & Anand, 2020). As part of public culture, stereotypes are learned through cognitive schemas (Arseniev-Koehler & Foster, 2022). Dyer (2002) argues that how groups are portrayed in public culture shapes how individuals perceive themselves in society and understand their rights. According to Shaw (2010), cultural representations can further impact the careers of information professionals, influencing their salaries, status, and visibility.

## **Data and Methods**

Data was collected from DALL-E, Midjourney, and Adobe Firefly, with images generated using prompts in both English and Portuguese. Since Portuguese includes gender markers for the word "librarian" ("bibliotecário/bibliotecária"), the prompts were adapted to describe a person who works at a library in a gender-neutral manner to ensure accuracy in both languages. For comparative purposes, images of American and Brazilian librarians were also generated. This variation in language and nationality reflects the predominance of English-language data from the United States (Cheong et al., 2024) and offers a broader perspective on how librarians are depicted across different linguistic and cultural contexts. One of the authors speaks Brazilian Portuguese as their first language, and one of the authors speaks American English as their first language, which justifies the choice of languages for the case studies.

The images generated from these prompts were analyzed using thematic analysis (Braun & Clarke, 2006). The co-authors independently analyzed and labeled the collected data, identifying recurring themes and patterns in the visual representations. The co-authors then compared annotations to ensure consistency and resolve discrepancies through a collaborative labeling session. This process ensured a rigorous and comprehensive analysis, highlighting both shared and divergent portrayals of librarians based on language, nationality, and cultural context.

## **Expected Findings**

This is a working paper. However, based on preliminary data collection, various stereotypes arise when prompting the creation of images in American English, as shown in Figure 1. The portrayal of the typical librarian aligns with these images, presenting an idealistic representation of white, slender, and intellectual women. In one image, a cat is visible. Additionally, the library is portrayed as an old building, featuring candles and a classical—perhaps even outdated—interior style. Furthermore, there is a lack of diversity in the representation of librarians' services. Since representations of librarians are scarce in other media, it is not surprising that their depictions are similarly limited in AI.

*Figure 1: DALL-E American English-generated images of librarians*



When the tool was prompted in Brazilian Portuguese, the typical librarian was male, and the environment resembled a bookshop. The second image resembles one generated in English—it features similar glasses and a cardigan, and the face is nearly identical to the one created when DALL-E was prompted in English. Despite using a different language, the stereotypical image remains present in the right image. Since the training data in Portuguese is smaller than in English, it is possible that the model created the left image by approximating the meaning of "library" and "bookshop." We will address such investigations in the paper.

*Figure 2: DALL-E Brazilian Portuguese-generated images of librarians*



With the growing popularity and ease of access to Generative AI, a more critical approach is necessary. The training data that underpins these systems reflects societal biases (Friedman & Nissenbaum, 1996) and can reinforce harmful perspectives, as algorithms learn patterns while also absorbing users' biases (Bender et al., 2021). The interplay between machine and human biases perpetuates and transmits cultural schemas (Arseniev-Koehler & Foster, 2022). Librarians offer a particularly compelling case study due to their role as knowledge keepers. Since libraries exist to serve the public, continuing to portray librarians in stereotypical ways may alienate potential users. As Morales & Williams (2021) argue, contemporary representations of librarians may reflect an ongoing identity crisis that the profession has faced for the past fifty years. Efforts such as equity, diversity, and inclusion programs are remedial works that aim to address this issue and promote greater diversity in librarianship. However, while the stereotypical representations do not change, the profession likely will continue to remain having an outdated – and predominantly white, female, and middle-class bias.

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