

# “I’m a virtual assistant so I don’t have pronouns the way people do, thanks for asking”: gender neutrality, diversification and fluidity in AI

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Pedro Costa<sup>1</sup>, Luísa Ribas<sup>2</sup>,  
Miguel Carvalhais<sup>3</sup>

<sup>1, 2</sup> CIEBA Centro de Investigação e de Estudos em Belas-Artes / Universidade de Lisboa, Faculdade de Belas-Artes <sup>3</sup> i2ADS / Faculty of Fine Arts, University of Porto

Lisboa, Porto - Portugal

pedro.carv.c@gmail.com, mcarvalhais@fba.up.pt, l.ribas@belasartes.ulisboa.pt

## Abstract

This paper questions how current digital assistants tend to be feminized through their anthropomorphization and humanization, discussing possibilities for countering this phenomenon. It draws on a previous study on the relationship between gender and AI, complemented by an analysis of Alexa, Cortana, Google Assistant and Siri. Furthering this discussion, we address the main questions, justifications and suggestions raised by researchers and academics as well as online media coverage when examining the phenomenon. One of the main questions relates to how these assistants evade this topic by claiming to have no gender or to be gender-neutral. Thus, this paper discusses possible approaches to deal with gender attribution in AI, by looking into recent trends that range from gender neutrality and diversification to queering these entities. On the one hand, digital assistants could be more diversified and include male counterparts or alternatives, on the other, we discuss how our understandings of gender are expanding beyond binary conceptions and how digital assistants can accompany more fluid conceptions of gender. Particularly, this paper debates how the development of this technology could be informed by current discussions in queer theory and new media studies, inciting reflection on how digital assistants reflect our social and cultural views back to us.

## Keywords

Artificial intelligence; digital assistants; gender; femininity; queer; trends of development.

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## Introduction

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The integration of artificial intelligence into our daily lives shows how quickly and ceaselessly this technology evolves, often eluding critical debates surrounding the social and cultural implications of its development.

Following our ongoing research on the relationship between gender and AI, we previously discussed how this technology has become a natural part of our daily interactions, namely through digital assistants, whose growing anthropomorphization entails gender attribution that tends towards feminization.<sup>1</sup> We highlighted how their behavior often conforms to certain stereotypes and reinforces traditional conceptions of femininity, tackling into the questions that arise when this phenomenon is subject to closer inspection.<sup>2</sup>

We analyzed Alexa, Cortana, Google Assistant and Siri, observing how these entities tend towards femininity, either through their voices, the tasks they perform or by assuming behaviors traditionally deemed as feminine. We then examined general directions of development, observing how companies address the impact of their creations in an attempt to counter the tendency of feminizing digital assistants.

Complementing this debate, this study focuses on current discussions surrounding the feminization of AI and the main suggestions for countering this phenomenon raised by academics and researchers in queer theory, gender and new media studies as well as in online media contexts. Accordingly, when asked about their gender, Google Assistant says that it “tries to stay neutral”, Siri claims that “much like cacti and fish, it doesn’t possess a gender,” Cortana identifies as a “cloud of infinitesimal data computation” and Alexa argues that “as an AI, it doesn’t have a gender.” Despite these claims of being genderless and disembodied, we have previously observed how digital assistants enact gender through their voice, tasks and behavior.

Gender neutrality, meaning the absence of gender, is often framed as an illusion because we always tend to attribute gender to these entities. Instead, current debates often appeal to gender diversification through more male counterparts and customizable options. Recent updates in Alexa, Google Assistant and Siri included counterparts to feminine voices and names, revealing an intention of diversifying their gender. Although diversifying these entities with more options could be a way to counter femininity in AI, it still perpetuates gender conceptions according to a binary framework, eventually reinforcing cultural stereotypes.

Thus, gender fluidity emerges as a promising path. Authors such as Yolande Strengers and Jenny Kennedy suggest that instead of replicating manly and womanly attributes through their anthropomorphization and behavior, digital assistants could move away from these interpretations of gender and explore fluid or ambiguous possibilities. And according to this idea, in 2022 Siri gained a new voice, announced as “gender neutral” (although only available in English US, until now).

As current discussions in the context of gender studies and queer theory expand our understandings of gender, we observe how it also manifests outside a binary frame in individuals that aren’t male nor female and, instead, propose a new path of genderfluid or nonbinary identities.

Thus, this paper discusses gender and queer approaches to this concept, addressing how these debates can inform the development of current digital assistants, countering a tendency towards feminization that reinforces binary gender stereotypes.

We begin by addressing how digital assistants currently integrate our daily lives and tend to evolve in their portrayal of gender, according to functionalities and features that are being prioritized in their development as promoted by Amazon, Apple, Google and Microsoft. We then discuss the main questions that researchers and academics raise when examining the relationship between gender and AI, highlighting the fallacy of gender neutrality. By looking into gender studies and queer theory, we shed some light on the meaning of fluidity, nonbinary identities and the ways gender can be mapped outside a binary frame. Finally, we discuss how these debates can inform gender attribution in the development of digital assistants towards diversification or fluidity.

We seek to promote discussion and tackle the questions and possibilities that arise when the relationship between gender and artificial intelligence is subject to closer inspection.

## From assistance to companionship

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As digital assistants become increasingly ubiquitous, their progressive anthropomorphization accompanies an intent of turning them into friendly companions.<sup>3,4</sup> This phenomenon entails a feminization of these entities as they automate traditionally feminine labor by performing tasks of service, assistance, and emotional labor.<sup>5</sup> The way they interact with their users also conforms to

“stereotypical and gendered behavior patterns” as they fill the roles of caregivers, or other roles coded as feminine in western society.<sup>6</sup>

### **Trends of development**

In a previous study, we analyzed Alexa, Cortana, Google Assistant and Siri regarding their anthropomorphization, tasks and behavior, observing how they conform to traditional conceptions of femininity, reinforcing gender stereotypes.<sup>7</sup>

However, their trends of development have changed over the last years with their growing ubiquity, and seem to be more informed by current debates and concerns on their stance towards gender. In just a short time span of two years, digital assistants have been subjected to several adjustments to their anthropomorphization and socio-emotional interactions that reveal awareness of their feminization and attempts to move away from this tendency.

For example, Siri’s voice options no longer have a default gender, instead prompting users to choose one. Siri also tries to avoid attitudes which mirror stereotypes that frame women as submissive. Google Assistant assumes the device’s default voice, naming its voice options after colors.

Nonetheless, several languages in Siri and Google Assistant continue to lack a male counterpart or nonbinary voices. Further debates are needed, as these entities are primarily designed to replace traditionally female jobs, and the assisting and caregiving tasks they perform are inevitably rooted in historically female labor. Their socio-emotional interactions also need closer inspection and discussion, and there is little agreement on how to best tackle feminine stereotypes and traditional notions of gender embedded into AI. This can be exemplified by the way these issues are being countered with different approaches—for example, Apple has radically changed Siri’s personality to appear more distant and assertive, while Google Assistant and Alexa have preserved their caring, friendly and more approachable personalities.

### **Discussing digital assistants and gender attribution**

Expanding this debate to the main questions, justifications and concerns raised by researchers and academics when addressing the feminization of AI, as well as common discussions around this phenomenon, we noticed how it’s often emphasized that feminine voices are better suited for virtual assistants, while arguing that women are more caring than men.<sup>8, 9</sup> Additionally, these assistants exploit notions of

feminized labor, raising questions on whether femininity is being instrumentalized in order to influence users and ease interaction.<sup>10, 11</sup> This is often discussed in relation to how the teams of developers and engineers involved in the development of these assistants make decisions regarding their gendering without conducting studies that give them informed insight into user preference. And UNESCO suggests that this might be due to the lack of gender diversity in these teams.<sup>12, 13</sup>

Thus, suggestions on how to counter this phenomenon emphasize that no matter how diversified their anthropomorphized attributes might be, we tend to attribute gender due to their voices and behavior, thus revealing the fallacy of gender neutrality. Additionally, it becomes hard to erase or ignore the historical background of their tasks because, even though these assistants tend to state they don’t have a gender, the role of assistance, service and emotional labor are culturally gendered categories, deeply associated with the female realm. Therefore, “neutrality is not possible (...) when the very purpose of that robot is to replicate and replace feminized labor [as] gender has everything to do with a new robotic workforce of caring smart wives.”<sup>14</sup>

Instead, suggestions in favor of diversifying the anthropomorphization and behavior of these assistants are common, and reflected in recent developments in Alexa, Google Assistant and Siri which have included more voice options and updated their behavior as to be less submissive.<sup>15</sup>

Nonetheless, we observed that while explicit changes are informed by specialized and media discussions, this gender diversification is still enacted according to a binary approach to gender, focusing on a male-female dichotomy. A less explored solution emerges in the context of gender studies and queer theory as these fields of knowledge highlight the possibilities of developing nonbinary or genderfluid entities.<sup>16</sup> These discussions point to the need of questioning and debating gender stereotypes in AI within a binary frame as well as the way digital assistants reinforce them and, instead of merely including male counterparts, queering these entities emerge as a much promising way to counter the feminization of AI.

Aiming to discuss the possibilities of diversifying or queering digital assistants, we will first discuss gender and how it exists outside a binary frame. We then look into the way queer theory and nonbinary identities allow us to redefine and rethink our notion gender, opening up new ways to approach gender in AI.

## Queering gender outside the binary framework

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Gender encompasses one of the elements through which we explore and define our own identity. Through gender, we express an image that reflects how we deal with our identity on a more personal level but also how we deal with a broader social and cultural conception of these attributes. Even though gender is frequently associated with the physical body, it constitutes a mere instrument and something that one possesses, as opposed to a fixed and rigid attribute of our identity: “gender is not a fact, the various acts of gender create the idea of gender, and without these acts, there would be no gender at all.”<sup>17</sup>

### Gender fluidity

Gender is not definitive or fixed and “simplistic and rigid gender codes are neither eternal nor natural (...) they are changing social concepts.”<sup>18</sup> Accordingly, it doesn’t just manifest itself in masculine or feminine aspects, but also in a liquid way, and its expression can be easily transformed and adapted.

We can observe how certain individuals exist outside of these socially dominant and normative notions of gender, self-identifying as genderfluid or nonbinary. This means their identity isn’t compelled to act according to a stabilized and predefined notion of gender and it becomes possible to map gender and the body according to nonbinary configurations.

Even though until recently any deviation from the canonic values of gender was considered pathological, this idea of gender as something fluid isn’t recent, nor is it an uncommon social phenomenon. Interpreting gender as something experienced individually and culturally in exclusively feminine and masculine ways is a western notion, historically and culturally normalized. Trans identities can be observed throughout history and there are different interpretations and understandings of gender throughout time and space, without restrictions or concrete rules. According to Leslie Feinberg, “a glance at human history proves that when societies were not ruled by exploiting classes that rely on divide and conquer tactics, cross-gendered youths, women and men on all continents were respected members for their communities.”<sup>19</sup>

### Queerness and nonbinary identities

Thus, although binary interpretations of gender are ultimately imposed as correct and normal, they do not reflect the essential nature of gender. In order to counter

and question these approaches to gender, queer theory proposes the transgression of conventional norms and ideas. “Queer” defines a calling for a working together to overthrow mainstream thinking and articulate alternative lifestyles – “in terms of gender, queer revisits and revises the categories of ‘man’ and ‘woman’ as fixed, essential single identities” and “the open mesh of possibilities, gaps, overlaps, dissonances and resonances, lapses and excesses of meaning when the constituent elements of anyone’s gender, or anyone’s sexuality aren’t made (or can’t be made) to signify monolithically.”<sup>20</sup>

Those who fall outside the binary frame are carving out a “pathway of possibilities that are currently relatively unexplored, they/we are the avant-garde of gendered existence which is shifting the landscape of gendered possibilities.”<sup>21</sup> This allows us to disrupt conventional gender notions, mapping the body in new and unexpected ways.

Since what is socially prevalent nowadays is a normative binary perception of gender, it becomes necessary to reconsider the way we view human identity, its relationships, bodies and their respective existence in articulation with their surrounding spaces. Thus, the path to non-normative gender identities should include the deconstruction of socially imposed conceptions and acknowledgement of intersectional bodies, reclaiming gender’s fluid, liquid and free essence.

These identities allow us to understand how gender can be constructed outside traditional roles and stereotypes that determine how men and women should behave. With this approach in mind, we will now discuss how current digital assistants can counter the tendency of reinforcing normative conceptions of gender, being developed towards gender diversity or fluidity.

## Towards a diverse and post-gender AI

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When examining the tendency towards feminization in AI and the questions that accompany it, there are already some suggestions regarding ways to counter this phenomenon.

As previously discussed, gender neutrality or the absence of gender is hard to achieve as digital assistants display gender through their anthropomorphization, the tasks they perform and their socio-emotional interactions.

Thus, on the one hand, diversification calls for the addition of male counterparts and more customizable options regarding their voices, names and attitudes. On the other, it is also argued that digital assistants should move away from binary conceptions of gender and, instead, display gender fluidity or attributes that don't necessarily echo male or female traits.

### **Voices, names and customization**

In terms of anthropomorphization, a recurrent suggestion is to add male voice alternatives and eliminate female-by-default voices. According to UNESCO, this forces users "to choose the gender of their digital assistant" instead of being presented with a pre-gendered entity or by assigning "randomly and with an equal probability either a male or female intelligent bot to users."<sup>22, 23</sup> Additionally, customization and personalization options that go beyond "dichotomous male and female options" could be added.<sup>24</sup> For example, Google Assistant offers a pack of six different voices that are named after colors and Siri's voices are identified with numbers.

Digital assistants could also adopt less clearly gendered machine voices and names, which would "avoid complications surrounding the gendering of AI assistants."<sup>25</sup> This could translate into assistants that possess synthetic, mechanical, robotic voices, presenting themselves as obviously non-human entities that avoid further anthropomorphization. They could also have a neutral name (such as Google Assistant) and a voice that isn't immediately identified as male or female. For example, in March 2019, a communications agency released Q, a voice proposal for digital assistants that "speaks between 145 Hz and 175 Hz, a range often classified as gender-ambiguous [and] the voice sounds human but is not easily classified as male or female" thus suggesting that assistants could already possess nonbinary voices.<sup>26</sup> Following Q's footsteps, in February 2022 Siri gained a new voice, presented as one that doesn't sound obviously male nor female.

### **Assisting and caregiving roles**

Since digital assistants tend to perform traditionally female tasks, it also becomes important to reframe the way these roles are portrayed. We often see the advertisements of these products placing women in the kitchen or shopping for groceries (e.g., portraying Alexa as helping a mother prepare a meal). The way their functions are promoted and advertised should seek to diversify those who are portrayed in these contexts instead of reinforcing the association between women and traditionally female tasks.

According to Strengers and Kennedy, countering femininity in digital assistants should also be concerned with valuing "the role and contributions of housework, or wifework, and elevate its significance for everyone."<sup>27</sup> This is one of the most challenging aspects of the feminization of digital assistants since their tasks are culturally and historically rooted in traditional female labor. Regardless of how diversified their anthropomorphized attributes might be, it becomes hard to erase or ignore the historical background of their tasks as assistance, service and emotional labor are culturally gendered categories associated with the female realm. Additionally, these tasks are closely linked to submissive, caring and comforting attitudes which are also associated with traditional notions of femininity.

### **Gendered behavior and stereotypes**

As an alternative to merely diversifying their behavior, Strengers and Kennedy propose the queering of digital assistants, that is, disrupting and reframing the binary, cis-hetero patterns that currently guide the development of digital assistants. Accordingly, this approach "invites the possibility of staying with the trouble of [these assistants'] femininity rather than rejecting or neutralizing it."<sup>28</sup> Instead, queering digital assistants "has the potential effect of elevating the status of femininity in society [as it] provides opportunities to further transform what femininity is, the value of femininity, and its role in helping transform the world in more equitable and just ways."<sup>29</sup>

This could be achieved not only through more diverse names and voices, but also behaviors that don't necessarily echo female or male traits.

Another common discussion relates to the way digital assistants react to harassment and how their answers might convey stereotypes about women. Accordingly, when faced with abusive behavior, the type of answers that are most common among these entities include "compliance (playing the victim), aggressive retaliations (playing the bitch), or inability to recognize or react (playing innocent)", and authors like Curry and Reiser consider that virtual assistants should deal more effectively with these types of attitudes by being more dominant or assertive.<sup>30</sup>

By acknowledging the historical, political and social contexts that digital assistants emerge from, we can then start finding ways to counter stereotypes or harmful associations with femininity. Instead of simply including male counterparts or stereotypes, and by recognizing "what (feminized) roles smart wives are intended to perform in our homes rather than relegating

this to another form of invisible labor," we are able to identify common assumptions and stereotypes about femininity and actively move beyond them.<sup>31</sup>

## Conclusion

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As digital assistants become an integral part of our lives, their growing ubiquity and cross platform integration promote their anthropomorphization through their voices, names and even the way they behave. As they move closer to us, they become friendly companions that relate to us in affectionate ways, rather than mere assistants. In this process, femininity is often instrumentalized aiming to ease our daily interactions with these technologies. This instrumentalization concerns both their role as assistants that perform tasks that echo historically feminine roles, but also their role as ubiquitous companions that coexist with us and articulate those tasks with socio-emotional interactions that echostereotypical female roles and behaviors, as caring and submissive entities. Thus, they end up reinforcing common stereotypes regarding femininity as well as framing gender in a binary way.

Current discussions within the context of specialized research as well as in online media have become more concerned with the feminization of AI and the way current digital assistants reinforce social stereotypes, advancing justifications and possible suggestions on how to counter this phenomenon. Accordingly, they emphasize the fallacy of gender neutrality since anthropomorphized digital assistants inevitably engage with common assumptions of gender. Instead, suggestions focus on diversification and personalization. This means diversifying these entities as to include male counterparts, and erasing defaults while allowing the user to customize their own assistant. Although this counters the tendency of feminizing digital assistants, it still positions gender within a binary frame.

Alternatively, suggestions informed by gender studies and queer theory propose ways to develop gender fluid and ambiguous assistants that have nonbinary voices and display traits that aren't obviously masculine nor feminine, thus queering these humanized entities. At the same time, these entities can also suggest new ways to approach and rethink gender through technology, transcending binary and bioessentialist understandings of gender and humaneness, namely according to a transhuman perspective, as aspects we aim to address in future work.

As shown in current discussions and recent trends of development, the debate is growing. However, despite these promising ways in which digital assistants could evolve and move away from feminized personas, the current guidelines or regulations regarding their development and characterization as gendered entities are unclear. For example, the European Union's Ethics Guidelines for Trustworthy AI calls for minimizing gender and racial bias in AI design, but these orientations remain vague or ambiguous concerning what needs to be done.

Focusing on the way these assistants relate to their users, some recommend that these systems should not be designed in ways that contribute to sexism, negative body image stereotypes, gender or racial inequality.<sup>32</sup> Overall, there seems to be some awareness on the issues previously discussed and current guidelines are starting to take into account social and cultural issues surrounding the anthropomorphization of AI. These recommendations focus on avoiding discrimination, being more conscious and encouraging inclusion. However, they still lack clear guidance and direction from key ethical bodies as they tend to address gender regarding AI's role in society instead of addressing the unique and specific questions that emerge when gender is attributed to humanized daily companions.

Further discussion is needed, and we should openly and intentionally tackle the gendering of AI and, more specifically, digital assistants. Only then will it become possible to address the social-cultural values they engage with and eventually reinforce, thus creating adequate and properly informed guidelines on how to address the issues that emerge with this phenomenon.

In this manner, this study sought to raise awareness on how AI and its development is informed by our social and cultural views, namely influencing current generations. This study sought to point out some of the implications of this phenomenon, considering that, as much as digital assistants aim to appear neutral and impartial, they end up reflecting social and cultural assumptions back to us.

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