

Replication and Recognition

CQ Quinan

University of Melbourne

c.quinan@unimelb.edu.au

Keywords

transgender, recognition, artificial intelligence, image generators, biometric technologies

Advanced biometric technologies—including automatic gender recognition tools—pose obstacles for trans and nonbinary populations in several spheres. In relying on false understandings of gender as static and physiological, binary-based biometric technologies force trans and nonbinary bodies to conform to these systems in order to become legible subjects inside systems of border control and security (Hamidi et al. 2018; Keyes 2018; Quinan and Hunt 2022; Scheuerman et al. 2019). As Marc Cheong et al. write in their analysis of gender and racial biases in AI, “It is not that bias is something that is added onto an otherwise neutral technical system. It is that the biased outputs are part and parcel of the desired outputs since they are generated in the same way... The data used to train such systems are not free from bias and as such perpetuate and even amplify existing human biases” (2024, 13:3). Meanwhile these technologies increasingly extract data on trans users, which may then be used to train and “improve” machine-learning systems. Despite being misrecognized—or simply not recognized at all—by recognition and analysis technologies, trans and nonbinary faces serve to help “refine” computer vision in that they come to function as challenge sets. And even as biometric companies are honing these algorithms, discourses that frame trans people as deceptive or fraudulent circulate ubiquitously, with trans communities serving as scapegoats for advancing radical, Christian nationalist agendas centered on “traditional family values” (Quinan 2025).

The ways in which trans people are viewed as challenge sets for machine learning leads me to another question as we enter an era marked by AI: What role do AI image generators play in both uncovering assumptions about transness and solidifying attitudes towards trans people? AI systems look for patterns in the data on which they are trained, digesting what has come before to serve as tools of replication (with a twist), largely reflecting value judgments that exist in the vast online world. Platforms like DALL-E (which has now been folded into ChatGPT) and Midjourney generate realistic images of (fake) trans individuals, but ones that seem entirely built upon cliched imaginaries of how trans people look or act.

This is not to say that the images used by AI tools are comparable to those used for facial recognition at border checkpoints. Indeed, although both are statistical, they use very different data infrastructures and models. Instead, my point here is that these algorithmic technologies are similarly built on encoded cultural understandings of transness that have made their way into technical systems that shape fundamental aspects of daily life, including mobility, access, and culture.

This phenomenon is illustrated by sample images that DALL-E 2 generated when I inputted the prompt "Produce a photograph of a transgender woman." These images are underpinned by common discourses that circulate around trans women. Rather than creating an image of trans women as women, they play on common stereotypes of men in drag and tropes of trans women failing to "pass" or to "successfully" embody traditional ideas of femininity.



Figure 1. AI Image generator's response to 'Produce a photograph of a transgender woman'

When I asked DALL-E 2 to “Produce a photograph of a transgender man,” it appeared even more confounded. The image generator seemed confused by what a trans man could look like, with the platform producing images that could have been generated by the previous prompt.



Figure 2. AI Image generator’s response to ‘Produce a photograph of a transgender man’

It appears here that the phrase “transgender man” is overwritten by an understanding of “transgender” as referring specifically to trans women. This also aligns with a general obfuscation and invisibility of trans men in mainstream contexts.

Finally, when asked to “Produce a photograph of a nonbinary person,” DALL-E produced the most perplexing results. Nonbinary yielded upside-downness, backwardness, and invisibility. It also understood nonbinary people as only parts of people, with only small sections of the body generated (e.g., feet, legs, half of a face).



Figure 3. AI Image generator’s response to ‘Produce a photograph of a non-binary person’

Just as facial recognition software struggles to accurately “recognize” nonbinary users (precisely because the technology is binary-based), AI image generators cannot consistently represent a coherent person outside binary gender norms. The visual incompleteness of these figures also exemplifies transphobic discourses that frame nonbinary and trans people as not fully human.

As is beginning to be articulated in scholarship on the ethical dimensions of AI image generators, there is potential for a dangerous feedback loop, with bias in AI systems leading to biased decision-making. While in our increasingly

biometrically-determined world, one must be digitally legible in order to lay claim to rights, what does it mean when AI image generators exacerbate stereotypical notions of what a “transgender woman” or a “transgender man” looks like? What does this say about social and cultural understandings of gender, transness, and nonbinary identity? And how might this cause real harm? We should be particularly concerned about impacts on marginalized populations, including trans and gender-diverse communities, as generative AI models “both reflect what humans think and have thought...and influence what humans think” (Alfano et al. 2024, 4). As new AI-driven worlds begin to take shape we must continue to heed Donna Haraway’s prescient words that “it matters what stories make worlds, what worlds make stories” (2016, 12). Indeed, even in synthetic worlds, trans populations are made vulnerable. The worlds being proposed by many AI systems are unrecognizable and often antithetical to more inclusive worlds built on diversity of experience and representation—and those are the just and equitable worlds we now need more than ever.

References

- Alfano, Mark, Ehsan Abedin, Ritsaart Reimann, Marinus Ferreira, and Marc Cheong. 2024. “Now You See Me, Now You Don’t: An Exploration of Religious Exnomination in DALL-E.” *Ethics and Information Technology*, no. 26, art. no. 27. <https://doi.org/10.1007/s10676-024-09760-y>.
- Cheong, Marc, Ehsan Abedin, Marinus Ferreira et al. 2024. “Investigating Gender and Racial Biases in DALL-E Mini Images.” *ACM Journal on Responsible Computing* 1 (2), art. no. 13. <https://doi.org/10.1145/3649883>.
- Hamidi, Foad, Morgan Klaus Scheuerman, and Stacy M. Branham. 2018. “Gender Recognition or Gender Reductionism?: The Social Implications of Automatic Gender Recognition Systems.” *CHI 2018: Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, 1–13. <https://doi.org/10.1145/3173574.3173582>.
- Haraway, Donna. 2016. *Staying with the Trouble: Making Kin in the Chthulucene*. Duke University Press.
- Keyes, Os. 2018. “The Misgendering Machines: Trans/HCI Implications of Automatic Gender Recognition.” *Proceedings of the ACM on Human-Computer Interaction* 2 (CSCW), art. no. 88, 1–22. <https://doi.org/10.1145/3274357>.
- Quinan, CQ, and Mina Hunt. 2022. “Biometric Bordering and Automatic Gender Recognition: Challenging Binary Gender Norms in Everyday Biometric Technologies.” *Communication, Culture and Critique* 15 (2): 211–26. <https://doi.org/10.1093/ccc/tcac013>.
- Quinan, CQ. 2025. “From Criminalization to Erasure: Project 2025 and Anti-Trans Legislation in the US.” *Crime, Media, Culture*. Online First. <https://doi.org/10.1177/17416590241312149>.
- Scheuerman, Morgan Klaus, Jacob M. Paul, and Jed R. Brubaker. 2019. “How Computers See Gender: An Evaluation of Gender Classification in Commercial Facial

Analysis and Image Labeling Services." *Proceedings of the ACM on Human-Computer Interaction* 3 (CSCW): 1–33. <https://doi.org/10.1145/3359246>.

Author Bio

CQ Quinan is a Senior Lecturer in Gender Studies at the University of Melbourne. They work at the intersection of trans studies, critical security studies, and sociolegal studies, and their research on legal gender identity and biometric security technologies has appeared in various journals, including *Crime, Media, Culture, Journal of Gender Studies, Communication, Culture & Critique*, and *Global Perspectives*.