The SAGE Encyclopedia of Trans Studies

Gender Recognition Technology

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Algorithmic methods are increasingly being used to identify and categorize human characteristics. A range of human identities, such as gender, race, and sexual orientation, are becoming interwoven with systems. This entry discusses the case of automatic gender recognition technologies that algorithmically assign binary gender categories. Based on previous work with trans participants in human–computer interaction (HCI), this entry examines the ways in which current gender recognition systems misrepresent complex gender identities and undermine safety. Future work can build on this foundation by conducting participatory design workshops with designers and potential users to develop improved methods for conceptualizing gender identity in algorithms.

Algorithmic Identity: Introduction and Background

Increasingly, designers and engineers are building and relying on algorithmic methods to identify and classify people. From recommending products, automatically detecting language, and personalizing interactions, these algorithms often have clear benefits. However, the news media are replete with scenarios in which identity classification may be problematic.

For example, engineers have created machine learning algorithms to categorize sexual orientation by extracting and analyzing facial features from images. This work has faced severe scrutiny for its potentially dangerous implications—such as potentials for surveillance of what the system categorizes as gay and lesbian individuals—and criticized for its likeness to the flawed concept of physiognomy.

Other algorithmic methods, such as risk assessments for determining recidivism rates, have been criticized for their racial biases against Black people. These racial biases have been found to occur even when racial parameters are not included in the data used to train algorithms, as anticlassification methods have also shown to produce biases against protected classes in algorithmic methods. The removal of identity from certain algorithmic system may not prove the best, most equitable solution.

These problematic examples of human classification share two things in common. First, they have ramifications for minorities, often putting them at risk. The increasing adoption of algorithms seems to amplify the risks digital footprints present for historically marginalized individuals. Second, the background behind these algorithms highlights a tendency for them to be developed in generic ways, abstracted from specific systems, interactions, or contexts of use.

To untangle these problems—and investigate potential solutions—researchers can focus on a specific application area that has been little explored: automatic gender recognition (AGR) algorithms.

The Case of Automatic Gender Recognition

Existing approaches to AGR use computer vision and/or voice recognition data to predict a person's gender on an exclusively binary determination: female or male. One exception includes a data set of trans faces captured from YouTube in an attempt to identify a single person across gender identity transition. Even here, however, the transition was conceptualized along a binary spectrum and specific to the effects of hormone replacement therapy (HRT)—to say nothing of the authors' suggestion that people might use HRT as a means to avoid biometric detection.

Previous work has already uncovered the inaccuracy of AGR technologies on trans individuals. But scenarios such as these highlight concerns beyond accurate classification categories. They reveal the limited consideration, or even awareness, of the lived experiences of trans people. The broader impact of these consequence reflects more than simply gender. It may also reflect assumptions about age, presentation, and racial characteristics—other intersecting identity categories societies view through a gendered lens. The decisions embedded within technological systems reflect a set of values that can have negative consequences. That is to say, technology is not risk averse or neutral; it is safety critical and value driven.

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See also Embodiment; Gender Binaries; Gender Labels; Misgendering.

Further Readings

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