Artificial workers and real sexism: Sexist stereotypes in AI-generated images of workers

Abstract

Introduction

**Study 1**

In this study we examine whether the gender of images of workers in different professions produced by AI matched real-world gender distributions in these professions. Deviations away from the actual percentages of men and women in these jobs would show a gender bias in the current image-generation models.

**Methods**

**Sample**

We sampled 10-images from 5 different AI models for 30 different professions for a total of 1,500 images. The five AI models selected were all free to use and therefore may be particularly likely to be used by the general public for generating AI images. The five models were …. They all run on different models…

The professions were chosen from the US Bureau of Labor Statistics. We chose 10 professions which were predominantly male-dominated (35% or less women), had equal numbers of men and women working in them (45-55% women) and which were predominantly female-dominated (65% or higher women). See Table 1 for a full list of professions and exact percentages.

To collect data we asked the AI-image generation sites to “Show me a [profession]”. We then saved the ten images generated.

**Coding**

Images were coded for two variables related the main subjects of the images: gender and ethnicity. Full descriptions of the coding scheme can be found in the detailed codebook on the OSF: link. Coders were the authors on the manuscript. Coders were trained on the codebook and then asked to code 50 images. We then discussed any ambiguity as a group and refined the codebook adding details to resolve any ambiguities. Coders then continued coding and we had another meeting to clarify any confusion before the coding was finalized and further refine the codebook. All coders then reviewed their previous coding to make sure it was aligned with the latest version of the codebook.

For gender, we counted the number of men and/or women who were the main subject of the image. For ethnicity, we counted the number of white and/or POC people who were the main subject of the image. All images were double coded. Interrater reliability for gender was XXXX. Interrater reliability for ethnicity was XXXX.

Results

Table with gender percentages (US labor bureau, total, and by AI). Totals for male-dominated, equal, and female-dominated.

Table with ethnicity percentages (US labor bureau, total, and by AI)

Study 2

In this study we wanted to examine if there were visual markers of gendered stereotypes in AI-generated images of workers. We therefore used the same 30 professions as in study 1, but this time asked for a sample of images of men and women in each profession.

Methods

Sample

We sampled 4 images of men and 4 images of women from the same 5 AI models and 30 professions as in study 1. We chose 4 images because a preliminary exploration of the AI generated images showed that after 4 images the AI models tended to reuse the same or highly similar subjects in the same contexts. Thus we collected a total of 600 images of men and 600 images of women. We used the prompt “Show me a [profession] man/woman” to generate the images.

Variables

We coded the data for X different variables.

Coding