Can We Differentiate Between Computer Generated and Human Art? Spot the Fake!

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The main purpose of this research project was to determine whether machine learning algorithms creating art in three art genres, Ukiyo-e, Portrait and Landscape, are imaginative enough to fool humans into believing that the art was created by an artist. Answering this question has far-reaching implications for computers' roles in society. A machine learning algorithm was used to generate fifteen computer images in the three art genres. These images were included in a questionnaire with fifteen human art images from WikiArt in the same three art genres. One image was repeated to test the reliability of the data. A link to the questionnaire on Google Forms was distributed to 480 friends. 394 valid responses (82% response rate) were statistically analysed taking both gender and age categories into consideration. The results showed that human subjects were able to distinguish computer from human art in the Ukiyo-e genre, but not in the Portrait and Landscape genres with no significant differences between male and female respondents. Respondents in the 40-60 age category were best able to distinguish computer from human art. The respondents in the younger than 20 age category scored the worst, which could be attributed to their knowledge of art. These results indicate that machine learning algorithms can create art that is creative enough to fool humans into believing that the art was created by a human artist. Artificial intelligence and machine learning therefore has the potential to transform the creative arts industries as it has transformed many other industries.

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