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COG 356

Critical Thinking Essay 2 Colored

### Computing Machines Can Create Original Artifacts

As artificial intelligence progresses we as humans have been able to develop machines with more and more human-like function. Although even as Artificial intelligence has progressed, and new discoveries have been made, there are still speculations that machines will never fully function and learn as humans do. Normally there is a lot of criticism when it comes to machines creating original artifacts. This includes anywhere from musical compositions to paintings, and many people believe that you truly need to be human to create something original.

Although against what has been previously thought, I believe that computing machines can create original artifacts. Mainly, the reason that I believe that computing machines can create original artifacts in today's age, is due to the advancements in machine learning. Machine learning is a branch of artificial intelligence with the base idea that a machine can identify patterns in large amounts of data and make decisions or complete tasks with minimal to no assistance from humans. Without the use of machine learning, I don't believe that we would have been able to make the advancements we've made in AI.

Some of the first real work done using machine learning to create new pieces of fine art was done by David Cope. David Cope is an American author, composer, and scientist who conducted experiments in musical intelligence in the early 1980s. His experiments in musical intelligence or EMI uses an algorithm designed by Cope himself, that analyses large amounts of existing music and creates new pieces based on the style of the inputted data. Cope first used

EMI to fight his composer's block and use his algorithm to help give himself suggestions on the next note or measure to potentially use. Then after further development, the program would go on to be able to produce full symphonies styled after a famous composer like Bach. The experiments done by Cope were only some of the first, to follow would be many others similar to EMI. Another example of the use of machine learning to create original art is the AI program, Vincent. Vincent is similar to EMI, although instead of working with music, Vincent is programmed to assist and create paintings. Vincent has a pre-defined library of thousands of famous pieces of artwork done in the 19th and 20th centuries. Then by analyzing the artwork inputted into its library, Vincent is able to learn about colors, contrasts, brush strokes and much more. Vincent is capable of creating its own new pieces of art and can also assist humans in replicating and learning about the different art styles of past artists. Vincent and David Cope's EMI are just two examples of the use of computing machines to create original artifacts, and there are numerous amounts of other programs just like these.

The main reason why many people don't believe that machines can create original artifacts is due to the fact that humans cannot yet model meaning or creativity. For years humans have tried to model one's feelings and emotions, and time and time again we have failed. Many people believe that therefore without the expression of meaning and creativity behind the art, you truly cannot consider it to be art at all. Although just because something is created without meaning or creativity backing it does not mean that it is not an original piece of artwork. The work created is still something that has not yet been seen before, it's just based on other pieces of work. Art created by AI can also still cause certain feelings and emotions for the viewer or listener. This is aside from the fact that a machine doesn't possess feeling. Each of the pieces created by AI is done by the analysis of the components and characteristics of very famous artists

and composers. Therefore, it still has most of the same appeal to the viewer or listener that it would have if it were created by the artist that was used as the program's guidance. Another reason why people don't believe that machines cannot create original pieces of art is that computers have no past experiences. Many people believe that someone's experiences are what drive and inspire artists to create their best pieces of work. Although to reference what I previously stated, AI can analyze past artists work to create the new pieces of art as output. So, all that data can then be considered as the machine's past experiences, because the program uses the uploaded data just like an artist uses their life experiences as motivation.

The idea of computing machines being able to create original artifacts is all encompassed in the greater problem of trying to model human creativity and meaning. As I stated previously, computer and cognitive scientists have been struggling with this problem since the 1950s. With all the advancements made in AI, being able to have computing machines create original artifacts is a step in the right direction. With the use of machine learning and other advancements in AI, humans have been closer than ever to solving this issue. By now proving that machines can create original artifacts leaves hope that we can find a way to model human creativity and emotion.

Work Cited:

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