

Lesson 4 When Art Meets Technology

Artificial Intelligence and the Arts

On March 13, 2016, an incident occurred that thrilled the contemporary art scene. An unknown painting that seemed to be a work of Rembrandt, the great 17th-century Dutch painter, had been discovered! Rembrandt experts from all over the world gathered to view this portrait of a middle-aged man. They immediately recognized the artist's vivid style, but thoroughly examined the painting to make sure. Several hours later, they confirmed, "This is a genuine Rembrandt." How wonderful to greet a new work of this extraordinary artist more than 300 years after his death!

Suddenly, a group of people appeared in front of them. Their representative announced, "This is not a genuine work of Rembrandt." The experts protested, "With these features of brush and paint, this painting cannot be any other artist's work!" The representative calmly explained, "This painting was created by an artificial intelligence system through 3D printing. We are the engineers who developed that AI system."

The experts asked them to offer some evidence. They immediately presented a video showing the AI's production process. Their AI program learned to imitate Rembrandt's typical characteristics by examining data from his 346 works. It was then given the order "Make a portrait of a Caucasian male, 30 to 40 years old, with facial hair, in dark clothing with a collar, wearing a hat, and facing to the right" and produced what seemed to be a genuine Rembrandt. The experts were stunned.

This was just one of the events that provoked the question: "Can AI art be real art?" This question is unresolved, but more and more art critics see AI-generated artworks as a new field of art, just as photography eventually came to be seen as art rather than technology more than a century ago.

In 2018, a portrait created by AI was sold for nearly half a million dollars. The painting, Portrait of Edmond de Belamy, was produced by an art group, using an algorithm and a data bank of 15,000 portraits. This sale helped AI artworks become more accepted in the traditional art world. In 2022, an AI-generated picture, Théâtre D'opéra Spatial, won first prize in the Colorado State Fair's art contest. Since then, more and more AI-generated artworks have been exhibited in art galleries.

There are different views of AI art. To many people, it is at best an imitation of human art, not a true art form with insight into life and society. Some oppose AI-generated art because it can steal the data of human art without respecting copyright. In contrast, some artists welcome AI as a tool to create new art forms. There are also those who insist that AI is more than a tool. They argue that the results of AI creation are largely beyond human control and AI should therefore be seen as existing in its own right.

Let us look at the mechanism of AI creativity, which is programmed to work in a similar way to human creativity. Think of the AI technology of neural networks. It makes a machine "think," distinguish, and create in a similar way to a human brain. The machine doesn't simply follow human orders but learns by itself, which is done through a branch of machine learning called deep learning. This learning process enables a machine to discover distinct patterns from numerous data. Moreover, AI can even learn established art styles only to avoid them. It can then create a new, unique style.

This pattern of AI creation is much like the path taken by major artists such as Picasso and Van Gogh. These artists trained themselves by learning and mimicking other artists' styles until they found and created their own.

Of course, this does not mean that an AI system becomes an artist in the same way that a human does. Human artistic creativity, which raises ethical, social, or emotional questions through great art, is not yet thoroughly understood and cannot simply be compared with any AI system. Even so, we have better and better AI techniques which are able to imitate human creative activities. AI has already generated art that some viewers consider more impressive or moving than human art.

Now, we see AI platforms and apps that create pictures, music albums, and novels if we simply provide them with an idea. Although our question, "Can AI art be real art?", is still valid, AI can be a powerful source of inspiration and ideas for artists. AI-generated art will continue to challenge our views on creativity in the arts and the human relationship with machine intelligence.

Further Reading

Who Is the Author of AI-generated Art?

Artists usually sign their works of art to show authorship. But what about AI art? Who actually creates the work: the AI or the human using it? A major concern related to authorship is the copyright of AI-generated art. More and more companies, developers, and artists ask for legal protection of the artworks created by AI programs that they developed or used. Since current copyright law applies to humans, not machines, the "author" should be the person who arranged the creation of an AI-generated artwork. However, it is not always clear who undertook the arrangements. It could, for example, be the people who organized or funded the project, did the coding or "teaching" of the AI, or input a prompt.

Could an AI machine itself ever be considered an author with legal rights? It seems unlikely, but who knows how this question will be regarded in the future?