Photo: DPA

Painting robot sparks 'what is art?' debate

German scientists have built an artistic robot which can paint impressionist landscapes, portraits and still-lifes. But are David the robot's paintings more than the sum of his parts?

David's creators at the University of Constance in southern Germany upgraded a robot whose original function was to weld car parts and then fitted him with a camera and computer, as well as a painting palette and some brushes.

They then programmed him to replicate images by taking account of shape and shade, as well as relative position on the canvas.

Oliver Deussen, IT professor at the university, spent three years teaching David the robot, whose name stands for 'Drawing Apparatus for Vivid Interactive Display,' to paint.

"We were interested in describing human painting styles mathematically," Deussen told news agency DPA.

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The camera's function is to constantly compare the developing painting to the original image, thus allowing adjustments to be made. When the program can no longer identify improvements, David stops working.

The result is a painting, which while bearing an undisputed likeness to the original motif, contains human-like imperfections.

David even has the sophistication to replicate obscure touches like reflections in water. "In principle, e-David can paint in an impressionist style," Deussen told DPA.

But the paintings are raising questions about the definition of art and the role of the artist. Some speculate that in the future, smaller versions of David could enter the market, allowing people to direct their artistic robot companions to create unique, on-the-spot paintings of their surroundings.

"Pictures created by robots are conceptually fascinating and go way beyond an ordinary gimmick," said Robert van der Valentyn from the Van Ham auction house in Cologne.

But he conceded that the pictures represent "at best the efforts of the programmers, who as a rule, aren't artists but rather rely on existing art forms."

Van der Valentyn argued that robot-made paintings cannot emulate the intuition and creativity which goes into a painting by a human. "From that perspective, computer-generated paintings do not pose a threat to the art market," he said, pointing out that "Chinese factories already supply that market at incredibly low prices."

Holger Bunk of the Academy of Art in Stuttgart said that the artist's role in society has stood the test of time. "I have never heard of a development which calls into question what I as an artist or an art teacher do," he said, adding that he was skeptical about whether a robot could be taught to develop a sense of its own position in time and space.

While some may not be ready to describe David as the next van Gogh, his artistic apprenticeship is set to continue. His creators hope that he will soon be able to learn to use different techniques to convey motifs and to differentiate between people and objects.

Despite the scope of his ambition, Professor Deussen describes his creation not as an artist but as a "kind of modern paintbrush."

But as David's technique improves, the lines between human creativity and artificial intelligence may well become more blurred.

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