Vermeer's Girl With a Flute, right, was analysed by Carina Popovici, below, using AI. The findings support that of Amsterdam's Rijksmuseum museum, that it truly is by the Dutch master

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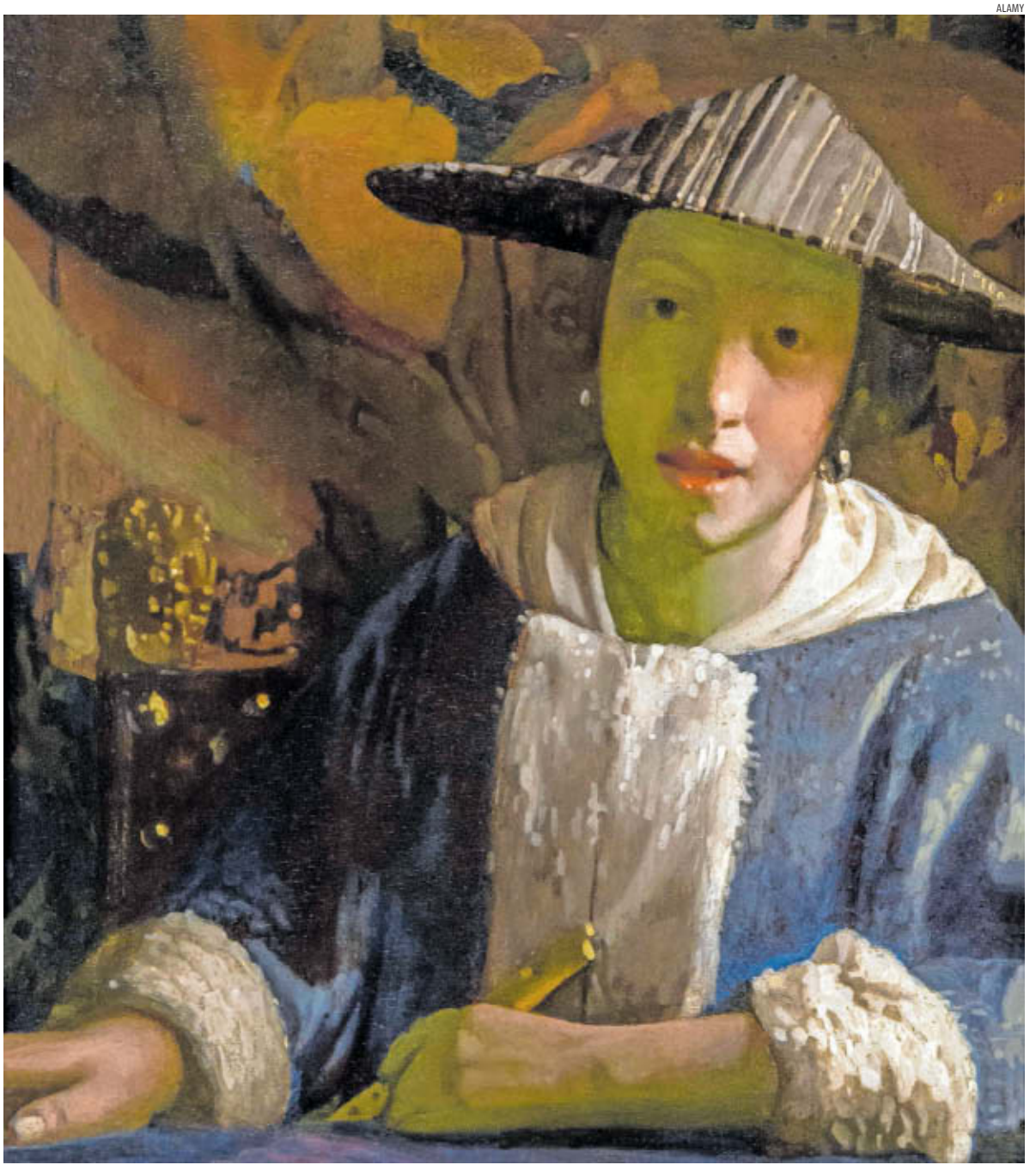

Intelligence that's artificial says Vermeer is not a fake

A Washington gallery declared one of its own paintings an imitation. The machine disagrees, writes **Tom Whipple**

Girl With a Flute is, the finest Rijksmuseum experts are in no doubt, a classic example of Johannes Vermeer's work. Look at the brushwork. Look at the delicate expression. It is "crystal clear", the museum said, it's a Vermeer.

Nonsense, say the finest experts at Washington's National Gallery of Art. Look at the "heavy-handed, flat application". Look at the "awkward composition". In every detail, *Girl With a Flute* lacks Vermeer's "intuitive command of his own remarkable talents". It is clear it was done by "an artist who had not mastered their craft". Now, though, a new protagonist has entered the fray: artificial intelligence.

A Swiss AI art verification company has analysed the painting and concluded that the Washington experts, in whose museum it resides, are wrong. It is definitely a Vermeer.

"I hope this will persuade them to return the painting to what it really is," says Carina Popovici, from Art Recognition. She said her software had "high certainty" that the girl looking enigmatically at the viewer once looked enigmatically at the master himself.

It is the latest twist in an argument sufficiently heated that several art experts refused to speak about it.

For a great of European painting, Vermeer, a 17th-century Dutch artist, has a surprisingly small oeuvre — fewer than 40 works. But in 2022 it looked like one of those was definitively knocked off the list. After years of doubt, the Washington National Gallery had used lockdown to properly analyse *Girl With a Flute*.

They agreed that it was very Vermeer-like. "The painting processes are so similar that we can imagine this artist watched Vermeer paint," they wrote. But, still, it was not Vermeer-like enough. "Here we see an artist unable to achieve the effect." It was an imitator. The verdict was all the more important because they owned it. People are rarely motivated to willingly knock tens of millions off their assets. But a month later, there was a surprise. The Rijksmuseum was holding a Vermeer exhibition and intended to display the painting on loan. It did its own analysis. It praised (faintly) Washington's research on their "four Vermeers", but said after looking at their "ten Vermeers" they disagreed.

"*Girl With a Flute* is lent as 'not Vermeer', but we will hang it as a real Vermeer," said Pieter Roelofs, the exhibition curator. "The doubt disappears somewhere during the flight over the ocean." Will the doubt now disappear on the other side of the Atlantic?

Art Recognition is one of several companies, bringing — to some suspicion in the art world — machine learning to the art of art accreditation.

Popovici, a physicist, started the company because of an incident in 2011. Wolfgang Beltracchi, a German forger, was convicted of selling fakes worth tens of millions. "The experts were all wrong. There was clearly something wrong with the traditional process of authenticating art," she said.

This is where she thought physics could help. Her technology works by analysing the existing, validated Vermeers. It looks at details like brushstrokes and colour variation, and broader details like composition and object placement. Then it looks at known forgeries. Even when there are only small samples of genuine works, Popovici believes the method can pick out fakes. They can provide more training data by mathematically combining the known paintings to generate new examples.

She has used the software to identify fraud on online auction sites, where people were making thousands selling worthless art. Now it has done the reverse. Will it be believed? Some have embraced the approach: Germann, a Swiss auction house, now accepts Art Recognition's certificates as proof of authentication. Others are cautious.

With a profusion of claims Popovici has been working with the Center for Art Law in New York to lay down guidelines. In a document about the legal implications of AI, she and the centre argue that they should work with human experts and be transparent about how the AI reaches conclusions.

Now it may face its sternest test. Neither museum would comment on the research. Even so, says Popovici, there is only one reasonable outcome. It is time the Washington National Gallery digs out the caption it used to display for the *Girl With a Flute*: "By Vermeer".

The power of AI to solve 'intractable' disputes, leading article, page 29

Painting gathering dust in garage was a Renaissance treasure

Rachel Muller-Heyndyk

A Renaissance painting dating to the 15th century which was found gathering dust underneath a garage workbench has fetched £685,000 at an auction in Oxfordshire.

The piece, showing the Madonna and Child, is thought to have been painted by the Renaissance artist Pietro Vannucci, known as Perugino, who was born in the mid 15th century.

A 15-minute bidding war took place online, over the phone and in the saleroom of JS Fine Arts in Banbury. "When the hammer fell, there was a hush, then applause", Joe Smith, principal auctioneer, said. "It was one of those moments every auctioneer dreams of. We knew it was special, but the response was beyond anything we expected".

The painting had generated so much interest from international collectors when it was put on the auction house's website in September that its phone lines were permanently engaged, according to the Antiques Trade Gazette.

A local person had bought it several years earlier but did not know its true value. The sale smashed the auctioneers' previous record of £265,000 for a painting by Eric Ravilious. Perugino was one of the most celebrated and influential artists of the Italian Renaissance. Born in Umbria, he was considered on a par with Da Vinci and was deemed the "best painter in Italy" in 1502. Along with Sandro Botticelli, he was commissioned to paint the walls of the Sistine Chapel in the Apostolic Palace in the Vatican, a generation before Michelangelo.

According to the Victoria & Albert Museum, Michelangelo called the artist "clumsy", and his pupil Raphael went on to outshine him. But Perugino's works became a favourite of artists and museums in the 19th century.

The V&A bought his Nativity fresco in 1862. The piece had been painted for a village church in Fontignano, near Perugia, but was left unfinished in 1523 when Perugino died of the plague.

Bids came in online, by phone and in the room for the Madonna and Child

Smith said that the response from the public had surpassed anything he had seen before. "We knew it was special, but the response was beyond anything we expected. The longer you looked, the more you realised the quality of the workmanship and the elegance of the Renaissance detailing," he added.

The new owner of the painting is an unnamed private collector. It is thought that they believe it is by the hand of Perugino but are carrying out more research into its origins

Last year a pair of oil on wood paintings showing Mary and Jesus crowned with thorns by Perugino fetched €739,000 at Dorotheum's Old Masters sale, a record price for the artist.