

# AUTHENTICATION IN ART

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## The Telegraph

### Could computers put art historians out of work?

Computer scientists have used the latest image processing techniques to analyse hundreds of works of art and unearth previously unconsidered sources of inspiration between artists



Diego Velazquez's Portrait of Pope Innocent X was found to have obvious similarities with Francis Bacon's Study After Velazquez's Portrait of Pope Innocent X



By **Matthew Sparkes**, Deputy Head of Technology

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Computer scientists have used the latest image processing techniques to analyse hundreds of works of art and unearth previously unconsidered sources of inspiration between artists.

Art can be analysed by looking at space, texture, form, shape, colour and tone, but also more mechanical aspects such as brushstrokes and even historical context. Traditionally this has been the role of art historians, but computers could soon be sufficiently advanced as to be able to take over, claim researchers at Rutgers, the State University of New Jersey.

Big advances in facial and object recognition in recent years have shown that computers can learn “aesthetic concepts”, they say. In a recent study they analysed art with new techniques which can classify the objects depicted within under common, everyday words, such as “chair”, “cross” or “man”. These words were then analysed to compare the images.

They looked at 1,710 high-resolution images from 66 artists, spanning from 1412 to 1996.

Some well-known links, long acknowledged by art historians, were found by the researchers' software. Klimt was found to be similar to Picasso and Braque, for instance. And Diego Velazquez's *Portrait of Pope Innocent X* was found to have obvious similarities with Francis Bacon's *Study After Velazquez's Portrait of Pope Innocent X*.

But it also showed similarities between Frédéric Bazille's *Studio 9 Rue de la Condamine*, painted in 1870, and Norman Rockwell's *Shuffleton's Barber Shop*, painted in 1950, which had never been made before by art historians.

“The painting might not look similar at the first glance, however, a closer look reveals striking similarity in compositions and subject matter, that is detected by our automated methodology,” said the paper, **submitted last week for publication** by Babak Saleh, Kanako Abe, Ravneet Singh Arora and Ahmed Elgammal.



Klimt was found to be similar to Picasso

In many cases the links appear circumstantial: the presence of a man at an easel and a large window in two pieces is not necessarily indicative of strong influence between the two artists, for

instance. But what it does do is prove that image processing is becoming more and more powerful all the time.

“We are not asserting truths but instead suggesting a possible path towards a difficult task of measuring influence,” the researchers said. It may not yet be a replacement for art historians, but is still important because “conversation of art continues and new intuitions about art can be made.

“It must be mentioned that determining influence is always a subjective decision. We will not know if an artist was every truly inspired by a work unless he or she has said so.”

The researchers said that their work provided “interesting results” but only “scratched the surface” of the problem.