

AUTHENTICATION
IN ART

AiA Art News-service

M THE MEMO

This AI spots art fakes in a single brush stroke

BY KITTY KNOWLES 21 NOVEMBER 2017



A Matisse hangs in a gallery. Image: Getty/Daniel Leal Olivas.
SUMMARY

Sorting the masters from the mimics.

Would you know an exceptional Picasso, from an exceptionally good fake?

Identifying a forged painting is a fine art itself, that once relied on the human eye, and now requires the use of expensive infrared cameras, radioactive testing, and gas analysis.

While getting an artwork verified can make millions, getting it wrong can cause uproar.

Just last year a huge scandal broke in which [25 Old Masters](#) worth around \$225m were found to have been fakes. On the flip-side one lucky spring cleaner fought critics to have a Caravaggio they found the in an attic [valued at €120m](#).

Now thought, artificial intelligence is coming to the aid of art historians everywhere.

There's a smart art AI that only needs *one brush stroke* to spot a sham.



A selection of images analysed by researchers. Image: <https://arxiv.org/pdf/1711.03536.pdf>

Smart art detective

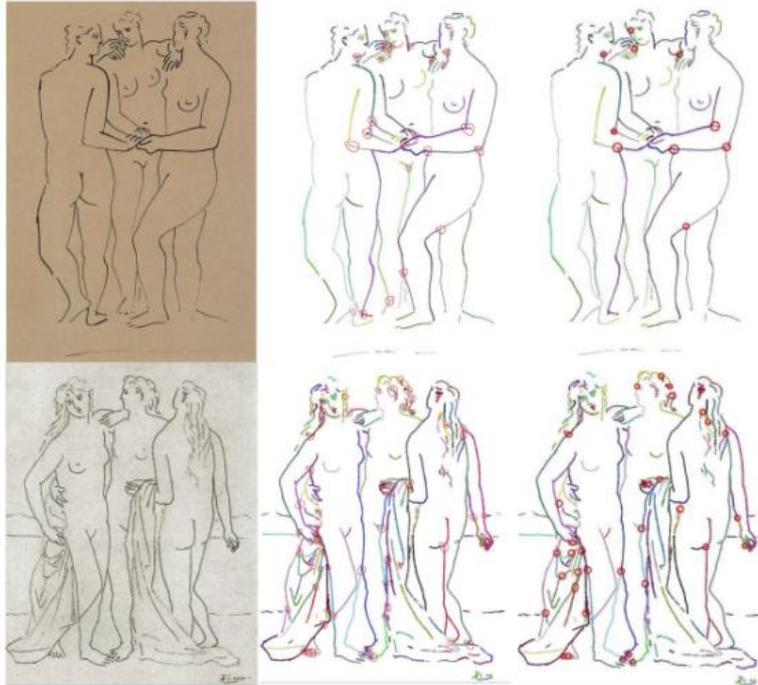
Nearing 300 line drawings by masters like Picasso, Matisse, Modigliani have been analysed to train up new smart detective tools.

Each artwork was separated into 80,000 individual strokes, and a ‘deep learning’ AI was tasked to learn what qualities it could assign each artist – like the strength of a brush stroke, for example.

Additionally, the research team from Rutgers University and the Atelier for Restoration & Research of Paintings in the Netherlands, trained a machine-learning algorithm to spot unique another set of features, like the curve of a brush stroke.

Using the two techniques, the researchers were able to name artists around 80% of the time. And, when the scientists presented faked paintings, the system was able to identify the forgeries in every instance – in just one brush stroke.

“A human cannot do that,” said Rutgers professor Ahmed Elgammal.



Two drawings by Picasso, stroke analysis, and errors spotted in 'fakes'.

Fighting fakes

For now, this kind of analysis can only identify forgeries in artwork where lines are clear, rather than in photorealistic paintings.

But the researchers hope to start testing their tools on Impressionists paintings and other piece that have stylised bold brush marks, says Rutgers.

Soon it will be easier than ever for art historians everywhere to sort the masters from the mimics.

Art frauds, consider yourselves warned.