

Computer identifies authentic Van Gogh

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(PhysOrg.com) -- Dutch researcher Igor Berezhnoy has developed computer algorithms to support art historians and other art experts in their visual assessment of paintings. His digital technology is capable of distinguishing a forgery from an authentic Van Gogh based on the painter's characteristic brush work.

Though the use of artificial intelligence made a relatively late debut in the field of [cultural heritage](#), computer algorithms are now steadily finding their way in this new domain.

Tilburg University PHD student Igor Berezhnoy has examined the extent to which colour analysis computer programmes can contribute to analysing the authenticity of paintings. He developed computer algorithms, which he tested on digital reproductions of Van Gogh's paintings. Using digital processes, he also studied how trademark features of brush work can reveal the identity of a painter. The Van Gogh Museum and the Kröller-Müller Museum in the Netherlands have been closely involved in this research project.

Colours and strokes

It is widely acknowledged that, during his French period, [Vincent van Gogh](#) began employing complementary colours to emphasize contours of objects or parts of scenes, for example blue next to yellow. With this in mind, Berezhnoy proposed a

new method of digital analysis (the Method for the Extraction of Complementary Colours), which enabled him to identify general colour patterns in Van Gogh's work. This method provides an objective way to support art historians' analysis of colours in a painting, thereby enabling them to determine its authenticity..

Berezhnoy has also developed a digital analysis technique to detect the orientation of brush strokes (the Prevailing Orientation Extraction Technique). His research demonstrated that this method was also effective in identifying the 'fingerprint' of a master and thereby revealing his identity. .

Experimental research shows that these digital technologies are just as effective in identifying the authenticity of paintings as the discerning eye of an art historian. Berezhnoy is, however, keen to point out that digital technology will never replace art historians.

Provided by Tilburg University

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