

# Classifying artworks with a multiple naive Bayes algorithm

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Credit: Pixabay/CC0 Public Domain

A multiple naive Bayes algorithm can classify artworks by preprocessing and analyzing the histogram of the hues in the image with 99.6 percent accuracy according to work published in *International Journal of Arts*

*and Technology.*

Gang Liang of the School of Art and Design at Taizhou University in Taizhou, China, points out that in the digitized world there is a pressing need to find ways to search for specific images but too many classification systems for those images to allow us an efficient and simple way to home in on a particular image. Liang hopes his approach will change that by allowing the rapid classification of digital images of artworks, which can then be used as the source material for a [search engine](#).

Until very recently classification of artworks was an entirely subjective process carried out by visual inspection. The advent of digital image analysis then allowed curators of even the largest collection of artworks to classify the images using image brightness, color entropy, and other characteristics, all with varying degrees of success. However, even though such approaches might be automated they are nevertheless rather time consuming and not without other problems such as low accuracy of classification.

Quantifying the hues within an [artwork](#) and comparisons with other artworks is difficult, hence Liang's turning to the multiple naive Bayes approach. Liang points out that in the current iteration of the system it takes just 2 seconds to carry out a [classification](#) of a terabyte of image data. This compares rather well with earlier approaches which take 30 or 40 seconds to classify the same amount of image data.

**More information:** Gang Liang, Image classification of artworks based on multiple naive Bayes algorithm, *International Journal of Arts and Technology* (2022). [DOI: 10.1504/IJART.2021.120580](https://doi.org/10.1504/IJART.2021.120580)

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