INFOGRAPHIC

3D PRINTING IN ART

2024

USING 3D TECHNOLOGIES IN THE ARTS



New Forms of Art

3D printing is already being used to create contemporary artworks that combine technology and tradition in interesting and innovative works. Artists choose 3D printing because it allows them to play with unusual designs, geometries and shapes.



Accessibility

3D scanning and 3D printing of museum works make art more accesible for people with various disabilities, especially visual impairments. Many museums create 3D printed reproductions of artworks and monuments so that visitors can touch and experience them even without seeing them.



Restoration

3D technologies are useful in the restoration of ancient or damaged works, historic buildings and monuments. 3D scanning and 3D printing of missing parts, decorations, details, or reliefs are useful for restorers to faithfully restore the work to its original version.



Digitization

To facilitate access to works of art from around the world as well as to promote and encourage art awareness globally, may works from both museums and public spaces have been scanned and made available online in the form of images or 3D files that can be reproduced even at home.



Reconstruction

Sometimes restoration is not possible because important works and ancient monuments have not withstood the wear and tear of time or have been completely destroyed. 3D printing can come to the rescue by recreating now nonexistent monuments from scratch after they have been digitally reconstructed.



Research and Education

3D technologies can make works of art usable to more people, while the use of 3D printing can make them not just more accessible but also promotes training, education and research about art, archaeology, history, etc.

WORKS RECREATED AND RESTORED **BY 3D PRINTING**

"THE THINKER" BY RODIN

Badly damaged when stolen from the Singer Laren Museum in the Netherlands, once found, the statue was restored through 3D scanning and 3D printing of the preserved original casts.



VAN GOGH'S " BEACH AT SCHEVENINGEN **IN STORMY WEATHER" PAINTING**

Currently placed in the Van Gogh Museum in Amsterdam, this masterpiece was restored via photographs of the original artwork by using 3D printing to build a mold of the missing piece of paint.



RESTORATION OF A STATUE HAND

A marble funerary statue was repaired using 3D scanning and a plaster copy of the damaged hand. By validating the geometry and dimensions of the finger replicas on a 3D printed hand, the sculpture was restored.



RELIQUARY DEPICTING THE CRUCIFIXION OF CHRIST

Made of different materials (glass, fabric, metal...), this reliquary was restored for the Museum of the Treasury of the Grand Dukes of the Pitti Palace in Florence. The details of the ornaments were 3D printed with an SLA printer and painted.





REPRODUCTION OF ARCHAEOLOGICAL WORKS

Researcher Néstor F. Marqués, with the help of the company BQ and 3D printing, has managed to recreate some archaeological pieces from the Vila Museu, in Alicante. A Greek terracotta head was reconstructed and enlarged by 10 to improve accessibility and allow visually impaired people to touch the reproductions.

PALMYRA ARCH

This famous monument was destroyed in Syria by ISIS and rebuilt by TorArt and D-Shape using 3D technologies, rock and sand 3D printing, rough printing marble and sandstone blocks. It has been symbolically displayed in many cities around the world.







ARTIFICIAL CAVE FROM **THE 17TH CENTURY**

Having deteriorated over time, some of the decorations on the walls (shells and limestone decorations) had disappeared. By printing with SLA shell molds (for geopolymer resins), the cave was restored to its original state.





KEY FIGURES

16,000

The number of 3D models of art artifacts available on the Scan the World website, a digital gallery created by Google to showcase and preserve art (GOOGLE ARTS & CULTURE)



The number of visitors to the **3D** Printed Forest at the Spanish Pavilion at the Dubai EXDO (DUBAI EXPO)



The time it took to print a life-size statue for the UK's 2018 "Making Blood Cancer Visible" campaign, compared with several weeks needed to sculpt by hand (MASSIVIT)



The percentage of restorers, students, professors and teachers surveyed who said that 3D technologies can be useful in their current art restoration work

(UNIVERSITY OF ANTWERP)

The duration of the project to scan

and 3D print the walls of Pharaoh Seti I's tomb in Egypt run by the Factum Foundation

(FACTUM FOUNDATION)

YEARS

5

TIMELINE

2013	French artist Gilles Azzaro designed and printed a custom sculpture based on Barrack Obama's voice during the State of the Union Address.
2015	Designer and professor John Edmark 3D printed the Blooming Zoetrope Sculptures. These sculptures, inspired by nature and the Fibonacci sequence, create an optical illusion as they rotate, appearing to be animated.
2016	Using 3D scanning and 3D printing, Mattia Mercante and Cristina Gigli of the Opificio delle Pietre Dure Institute in Florence 3D printed the missing part of the decoration of "The Panel of Cosimo III." The part was then meticulously machined to match perfectly.
2017	The Centre Pompidou in Paris opened the exhibition "Imprimer le monde" (print the world) in which designers and artists investigated the impact of 3D printing on human creativity with their works.
2019	In the exhibition "The Beginning of the End," Sebastian ErraZuriz displayed 3D printed sculptures of the people who are shaping our future, such as Jeff Bezos, Elon Musk and Mark Zuckerberg. A warning about the impact of technology on today's society.
2020	The University of Florence and Swedish company Hexagon 3D printed a 5-meter-tall replica of Michelangelo's David for the Dubai World Expo. It is, to date, the closest copy to the original.
2022	Litomasters company was born, using 3D scanning and 3D printing to reproduce world-famous artworks to near perfection in limited editions.
2024	Austrian artist Julia Körner has used 3D printing to create sculptures that visually represent sounds and symphonies. Working with the Gävle Symphony Orchestra, she was able to capture music and give it a new dimension through 3D printing.

