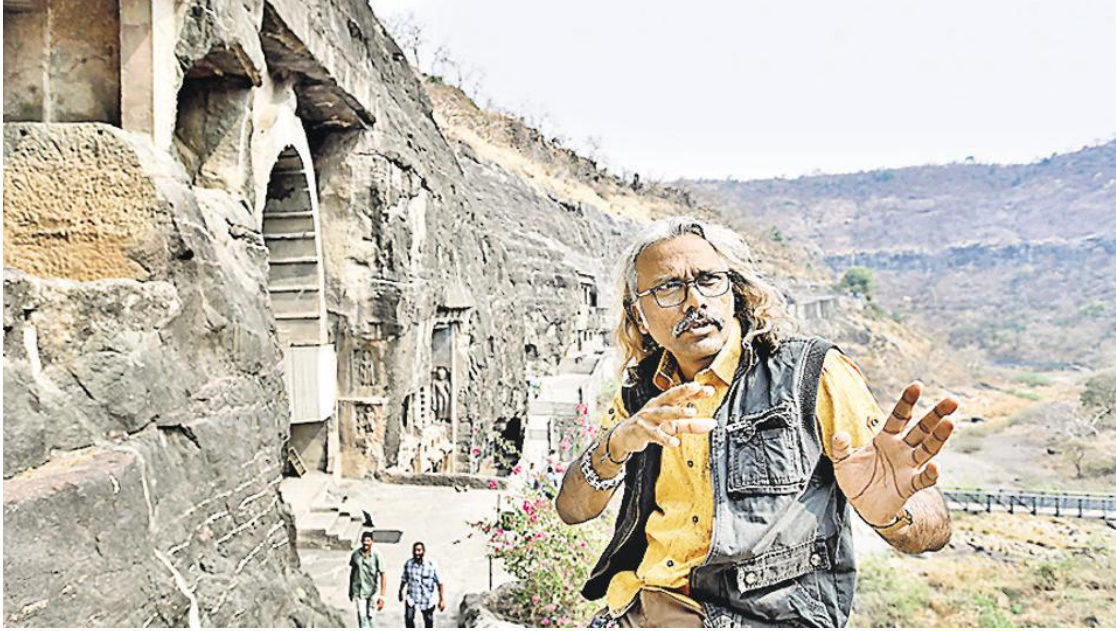


Meet the man who is digitally conserving and restoring the Ajanta caves

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The paintings in the 2000-year-old Ajanta Caves are in a precarious state and can't be fully restored. But there is an attempt to restore them digitally



Prasad Pawar is an artist-sculptor and research photographer at the Ajanta Caves, a world heritage site located 5km northeast of Aurangabad in Maharashtra. (Ajay Aggarwal/HT PHOTO)

Arif Khan and his wife Nazia had planned their visit to the Ajanta Caves – their first Valentine’s Day outing after their wedding in November – meticulously. They started early from their hometown, Aurangabad, 107 km from the caves, because the “history buffs” wanted to spend as much time as possible at the Unesco World Heritage site. A day before their outing, Nazia bought an old fashioned guidebook to understand the complex narratives behind Ajanta’s fabulous 2,000-year-old murals and sculptures, which depict the lives and times of Buddha and Bodhisattvas (the principal figure in the Jataka tales, which narrate the previous lives of Buddha). [“We were excited because many things about Ajanta are still a mystery: who built and funded the construction of the rock-cut caves, and the paintings, and why did the inhabitants suddenly leave the site?”](#) said Nazia, 28, a primary school teacher, as she stood in a queue outside cave number 7. [“But I am disappointed because we could not see the murals properly... it is so dark inside the caves.”](#) Arif, 32, also a teacher, added with a disarming smile: [“No clear photos for Facebook either. But how did the artists do these incredible paintings in this near-pitch darkness?”](#) That question has intrigued many including Nashik-based artist-photographer Prasad Pawar, who has been researching, documenting, photographing and digitally restoring the Buddhist paintings and sculptures in Ajanta for 27 years, but without touching them. [“It is indeed a mystery how monks and artists produced such array of work with minimum light. Take for example, cave number 1 \(80x80ftx12ft\). It has only one door \(1x2 metres\) and two windows \(1x1 metre\). Yet the walls and ceilings have beautiful murals, and carvings on the pillars,”](#) said Pawar, a slim, tall man with shoulder-length salt and pepper hair. [“The artists couldn’t have used mashaals because they would suck the oxygen out of the room, making it difficult to work, and also leave carbon deposits on the artwork”.](#) [It’s not just the semi-darkness inside the caves that challenges visitors such as Nazia and Arif at Ajanta, a horseshoe-shaped site, overlooking a narrow sinuous gorge and a hilly rivulet called Waghora. There are other restrictions imposed by the Archaeological Survey of India \(ASI\), which manages the site, to ensure that these fragile murals and statues are not damaged: No camera flash or harsh light \(there are soft LED lights inside the caves since stronger ones can destroy the skin of the murals\); limited viewing time \(10 minutes\) and barriers at 8-10 feet in front the murals and Buddha statues to prevent viewers from touching the artwork. The paintings are in a fragile state, with missing portions, thanks to their antiquity, water seepage \(98 per cent of the cracks in the caves have now been sealed by ASI\), missteps in earlier conservation-restoration practices that began from the British era, vandalism and robbery.](#)



[This chaitya griha or prayer hall can be traced to the fifth century AD. The hall has painted depictions of Buddha in various poses. \(Ajay Aggarwal/HT PHOTO\)](#)

"The first vandal was Captain John Smith, who discovered the caves in 1819. He etched on a Bodhisattva: 'John Smith, 28th Cavalry, 28 April 1819,'" said SC Deshmukh, a lawyer-turned guide. The site has 29 caves (including the unfinished ones). There are not just paintings on their walls but also images/sculptures of Buddha in different mudras. Despite grand exterior carvings, some of the caves are unfinished. RESTORING AJANTA, PIXEL BY PIXEL "If you make holes in a page of a book, will anyone manage to read the story? This is how we are viewing Ajanta now. It's difficult to comprehend the complicated storylines in the murals, many of which use cinematic flashback style," explained Pawar, 50, a fine arts graduate from the Maharashtra government-run Nasik Kala Niketan Chitrakala Mahavidyalaya. This broken narrative of Ajanta's murals had been troubling Pawar since his first year at art college when his teacher showed him one of the most famous murals – 'Padmapani' – in cave number 1. The mural, delicate and elegant, shows the Bodhisattva, his relatively dark-coloured body with the locks of curly hair, in a meditative state. His calm face and the shape of the body gives a three dimensional effect in the painting. In his right hand, he holds a lotus blossom, which represents spiritual awakening. There are two missing patches in the painting. "I asked my teacher if I could restore those parts, though at that point of time, I did not know how to do it... but my teacher said that I was too young to attempt such a thing," reminisced Pawar, who recently held an exhibition of his work – Glorious Ajanta – at the Indira Gandhi National Centre for the Arts (IGNCA) in New Delhi. By the time Pawar finished art school, his heart was set on Ajanta. He was keen to save the paintings and also build a global audience for them. Since no one can touch Ajanta paintings except ASI's specialised team, he decided on photographic documentation and digital restoration of the murals and statues. Pawar has a special permit from ASI, which allows him to photograph the paintings from close quarters (without flash). With his digital cameras (Canon and Hasselblad) and custom-built technology, the Nashik-based artist has been photographing the paintings and statues segment by segment, followed by digital colour correction and digital restoration of the missing elements (colour, characters, ornaments etc) in consonance with the originals. WATCH: The man on a mission to restore Ajanta caves Seventy of these digitally restored works were showcased at the IGNCA exhibition, which included the iconic images of Padmapani, Vajrapani, Black Princess and many paintings from cave numbers 1, 2, 16 and 17. Those who attended the exhibition – unlike Nazia and Arif – could see the paintings and their minute detailing and interact with Prasad to learn more about Ajanta.

The ASI's Ajanta team does two types of restoration at the site: structural and chemical. "We ensure structural stability of the caves and also waterproof them. The chemical department does scientific conservation," said Dr DK Khamari, superintending archaeologist, Archaeological Survey of India, Aurangabad Circle. Scientific conservation includes monitoring the temperature and humidity inside the caves (this impacts the murals), fixing the pigment layer and gaps in the plasters, placing protective coating, which is reversible and transparent, to save the murals from dust, and digitally monitoring the intensity of the natural colours used in the mural to keep an eye on fading. "The conservation work is like human surgery...it needs a lot of patience," said AK Mishra, deputy superintendent, archaeological chemist, ASI, Aurangabad Circle.

AJANTA

A mystery for photographers

Many have tried to capture the beauty of Ajanta's paintings. Major Robert Gill was appointed by the East India Company to produce facsimile copies of all paintings in 1844. In 1866, the copies were sent to London for an exhibition. But a major fire destroyed 20 years of work. In 1872, Sir John Griffiths, principal of JJ School of Arts, Mumbai, was entrusted with the work. But his paintings too were gutted in a fire at an exhibition in London.

A rich legacy

The paintings and sculptures were crafted by unknown Buddhist monks and artists between the second century BC and sixth century AD. The site has 29 caves (including the unfinished ones) of which four are finished chaitya halls (prayer halls) and one unfinished whereas rest are viharas (monasteries) as well as chaitya-vihara combine. The paintings are also a snapshot of the history of those times: court and street scenes, domestic life and flora and fauna and the global trade links. The murals could be grouped into three distinct categories: images of Buddha, Bodhisattvas, narratives of life of Buddha, Jatakas, and Avadanas, ceiling decoration and decorative motifs. "These paintings and sculptures provided the greatest inspiration in the art revival of the 20th century, as they had influenced many centuries earlier, the art tradition not only of contemporary India but also of central Asia," wrote ASI's first woman director Debala Mitra in 'Ajanta'.

However, conservation principles do not allow any restoration of missing portions of the paintings, something which Pawar can do digitally in his photographs. At best, ASI adds plaster, filling in the missing portions and then colouring it (matching with the painting) to camouflage the plaster colour. **WHEN HISTORY MEETS TECHNOLOGY** "In this age of mobile cameras and photo-editing apps, my work may look like a technological gimmick. It's not. There are many challenges,"

said Pawar, who has completed restoration of 14,400 sq inches of Ajanta's artwork to date. For the artist-photographer, the first challenge was a basic one: Lack of light inside the caves. "When I realised there is a ban on flash/halogen bulb inside the caves, I devised a slow process to tackle this problem: Photograph only that portion of a painting which is illuminated by natural light," explained Pawar. The problem is that if he misses photographing a portion of a painting, he will have to wait another 364 days when the light will fall exactly on the same portion. Pawar shoots 2 ft x 2ft at a time because only then he "can see the finer details and the brush strokes of the of the artwork better . This is important since my aim is to restore the paintings for posterity, not just photograph them". Second, finding evidence for his restoration work: "When you are looking at art that originated 2,000 years ago, you need to have some evidence and insight on vaastukala, ornamentation, clothes etc," said Pawar. But there are various versions of each story depicted in the wall paintings in Pali, Buddhist Sanskrit and Sinhali. He goes through old texts, matches the different versions of a story, speaks to scholars and then arrives at a conclusion on the story or the characters before digitally adding the elements back into the photographs of a mural. But finally Pawar trusts what the original visual "tells" him. "I try to understand what the artists were thinking while doing the painting. That gives me a clue on how to proceed". He has toured 35,000 km in India, and China and Sri Lanka to study Buddhist paintings and their various story-telling techniques. Even getting the correct colours used in the original paintings while digitally restoring them is difficult because the original colours were made from a mix of earth colours, vegetable colours, banyan bark, saw dust, hibiscus cannabis, horse manure, cow dung and minerals. The third challenge is building a relationship between Ajanta, his work and viewers of the final product. "Fashion technology students visited the IGNCA exhibition. Initially they were sceptical about Ajanta and my work," said Pawar. But when he showed them a painting that had a dancing girl wearing a silk blouse like women wear now, and other characters with a modern hairstyle, they found interest in the paintings and spent a longer time with him, discussing the nuances of the artwork. "People will appreciate Ajanta better only if they can see the intricate work in the paintings and understand the storyline," added Pawar. "But what I really want to tell those who are not convinced about my digital work is this: "No one can copy Ajanta. It is special".

CULTURAL INFORMATICS, THE WAY FORWARD

The artist-photographer, whose wife is also an artist and daughter aspires to be one, fears that Ajanta's murals may not exist for long, thanks to environmental and anthropogenic pressures that they have faced over the centuries. Pawar wants to create a museum to show the ancient Indian art to the world; he is in talks with the Indian Council for Cultural Relations to hold shows of 'Glorious Ajanta' abroad, especially in the Asean countries. "It's true Ajanta has faced tremendous anthropogenic pressures but I think the ASI is doing a good job to preserve whatever is left," said YS Alone, professor, arts and aesthetics, Jawaharlal Nehru University, New Delhi. "But Pawar's work is a good exercise because it brings Ajanta to the people in a much more accessible way."



The Ajanta Caves, a Unesco World Heritage Site, has 29 caves. On an average, 4,000 tourists visit the site per day. (Ajay Aggarwal/HT PHOTO)

*IGNCA is exploring options to see if Pawar's work – an example of cultural informatics (a broad term encompassing all areas in which new information technologies is used to enhance visibility of culture) – can be utilised to document other ancient monuments of the country. "We would like students of visual arts to use Prasad Pawar's method and technology to digitally restore other historical places so that people can truly enjoy these works," said Dr Sachidanand Joshi, member secretary, IGNC. "Vandalism is a real threat to our historical heritage. But exhibitions like Glorious Ajanta can help us to reach out to a wider audience and create a sense of history among the people, but more importantly, can help us keep out non-serious visitors from the original sites". First published by **Hindustan Times***