

World of Art

ancient and
classical art
architecture
art history
design and
decorative arts
modern and
contemporary art
monographs
performing arts
reference and
theory

Digital Art Christiane Paul

Fourth edition
265 illustrations

Digital art, along with the technological developments of its medium, has rapidly evolved from the 'digital revolution' into the social media era and to the post-digital and post-Internet landscape. This new, expanded edition of this invaluable overview of the medium traces the emergence of artificial intelligence, augmented and mixed realities, and Non-Fungible Tokens (NFTs), and surveys themes explored by digital artworks in the areas of activism, networks and telepresence, and ecological art and the Anthropocene.

Christiane Paul considers all forms of digital art, focusing on the basic characteristics of their aesthetic language and their technological and art-historical evolution. By looking at the ways in which internet art, digital installation, software art, AR and VR have emerged as recognized artistic practices, *Digital Art* is an essential critical guide.



Thames
&Hudson

on the cover
Claudia Hart, *Alice*
Unchained XR, 2018.
Courtesy Claudia Hart



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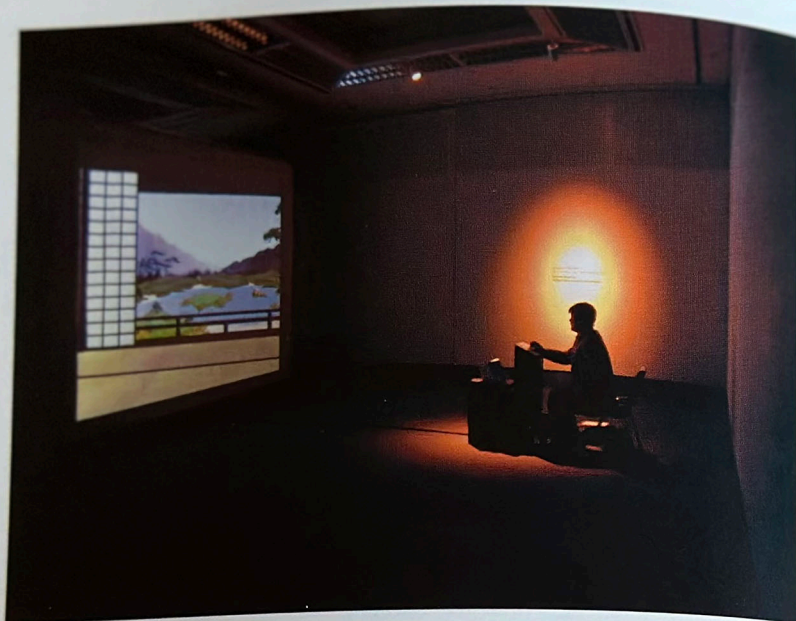
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89 Tamiko Thiel and Zara Houshmand, *Beyond Manzanar*, 2000. Not a photorealistic environment, this work combines the aesthetics of computer games with the techniques of stage design. Viewers move through a landscape consisting of shifting layers and creating alternate realities: opening the door in a building of the camp, they may find themselves in a Japanese paradise garden that suddenly disappears if they try to enter; following a road, they may find their way blocked by barbed wire.

As well as immersive VR environments, there is also a category of work that creates complex three-dimensional worlds that do not necessarily make use of a specially constructed environment but take the form of a more traditional screen projection. *Beyond Manzanar* (2000) by American Tamiko Thiel and Iranian-American Zara Houshmand is an interactive 3D world based on the actual location of Manzanar, the first of more than ten internment camps built to incarcerate Japanese-Americans during World War II. The life-size image of the 3D space is projected onto a wall within a darkened space, and viewers navigate and change the viewpoint by means of a joystick on a pedestal. Archival photographs from the internment camp are juxtaposed with Japanese scrolls and paintings in a constantly shifting environment that—reacting to the viewers' presence—illustrates a chasm of cultural identity, contrasting a dream world of cultural heritage with a reality of political injustice. The juxtaposition of simulated worlds in a political context also becomes a core element in *VR/RV: A Recreational Vehicle in Virtual Reality* (1993) by Peter D'Agostino, who has been working in video and interactive multimedia for decades. *VR/RV* is a projection of a 3D world that simulates a travel along the electronic superhighway (in the literal sense) by joining scenes from Philadelphia, the Rockies, Kuwait City,

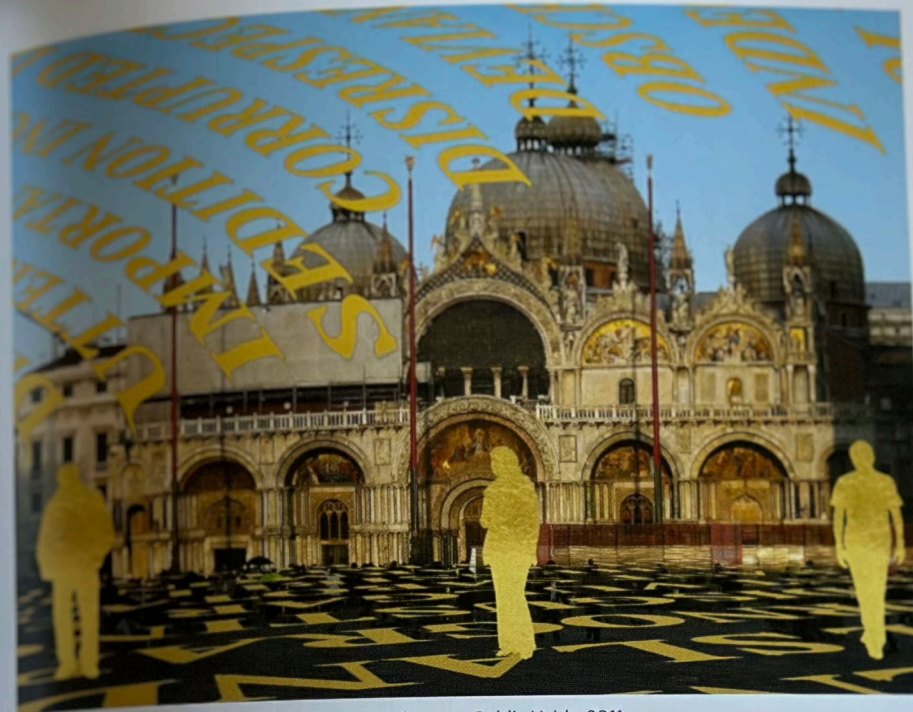
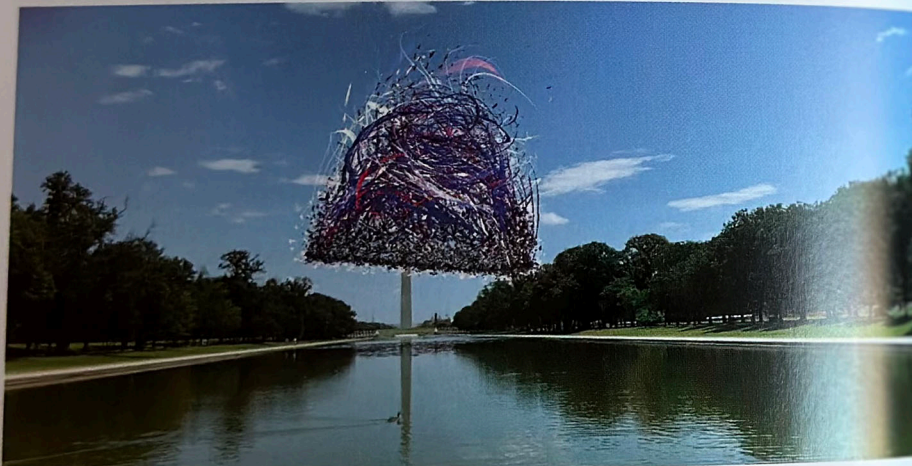
90 Peter D'Agostino, *VR/ RV: A Recreational Vehicle in Virtual Reality*, 1993



Tamiko Thiel's *Shades of Absence* (2011) consists of virtual 'Pavilions of Absence', in which images of contemporary artists whose works have been censored in the twenty-first century are reduced to gold silhouettes. By touching the silhouettes, viewers can bring up a website with information on the censored artists, and instructions on how they themselves can add new names and information via the Web or Facebook. Given that AR can render the invisible visible, it does not come as a surprise that this media form is often used in contested territories or for activist purposes. In their AR project *Border Memorial: Frontera de los Muertos* (2012–present), for instance, John Craig Freeman and Mark Skwarek visualize the scope of the loss of life at the US/Mexico border by using virtual objects to mark each location along the border at which human remains have been recovered.

99 Nancy Baker Cahill's (b. 1970) *Liberty Bell* (2020) symbolically engaged with issues of inequality, structural racism, injustice, and voting rights during the very polarized and tumultuous US election year of 2020. The monumental animated 360-degree augmented reality drawing, inspired by the original cracked Liberty Bell in Philadelphia, could be experienced through viewers' phones or tablets at six historically significant sites in the US, including the Washington Monument in Washington, DC, and the Edmund Pettus Bridge in Selma, Alabama. Shaped out of loosely entangled red, white, and blue threads that suggest both instability and cohesion, each bell is accompanied by tolling sounds compiled from a range of historical moments and locations and oscillating between harmonies and

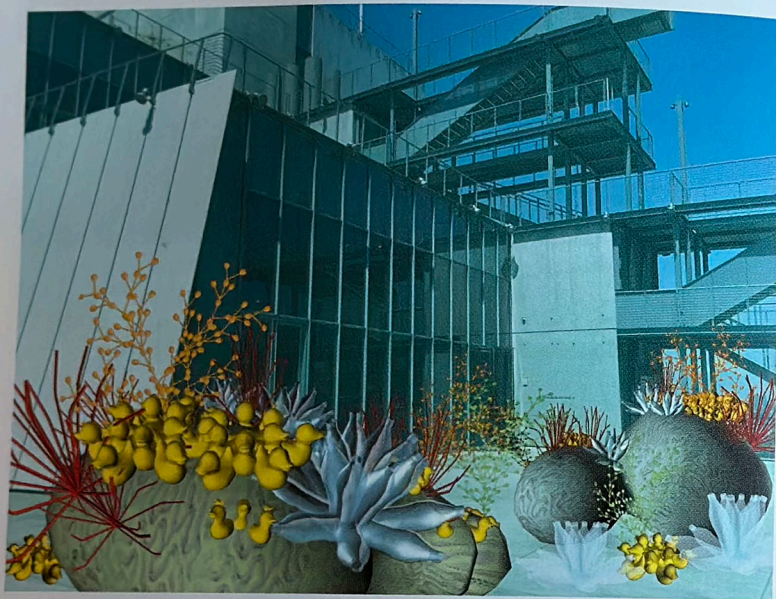
99 Nancy Baker Cahill, *Liberty Bell*, 2020



100 Tamiko Thiel, *Shades of Absence: Public Voids*, 2011

dissonances. Launched on 4 July, known as Independence Day, the AR work functions as both a reminder of the founding principles of American freedom and democracy and their unsteady state.

Augmented reality lends itself to location-specific visualizations of possible futures, and artists have increasingly used it to draw attention to environmental issues. Baker Cahill's *Margin of Error* (2019), shown as part of the contemporary art biennial Desert X across fifty miles of the Coachella Valley, consisted of a vortex of sparkling, organic-looking particles reminiscent of shell, sand, or salt crystals. Visitors encountered the work close to the Salton Sea—one of the most polluted lakes in the state of California—with algae blooms and toxic fumes that are expected to make the area unlivable in the near future. The Anthropocene and climate change also are the focus of *Unexpected Growth* (2018), an AR project by Tamiko Thiel (b. 1957) with /p that was originally commissioned for the Whitney Museum of American Art's



101 TOP Nancy Baker Cahill, *Margin of Error*, 2019

102 ABOVE Tamiko Thiel with /p, *Unexpected Growth*, 2018

103 OPPOSITE Cao Fei, *Trade Eden*, 2019

sixth-floor outdoor gallery. Thiel's virtual growth consists of plastic refuse and coral-like formations and offers a playful yet ominous glimpse of a future, where sea levels have risen to dangerous levels and ecosystems are irreversibly contaminated. Over the course of each day visitors experiencing the work stimulate the corals' growth, but once the number of viewers exceeds a certain threshold the accumulated exposure bleaches the formations and causes them to die off. After a lengthy period of overnight rest, the growths are restored to their original vibrancy. The algorithm used to create the forms of the corals is based on an L-system (or Lindenmayer system), a type of formal grammar developed in 1968 by the Hungarian biologist and botanist Aristid Lindenmayer to model the growth processes of plant development. Thiel highlights the inherent connection between natural processes and the generative qualities of code and the ways in which we affect the natural environment surrounding us.

AR increasingly has been incorporated in the programming of institutions, sometimes with corporate support. In 2019, the New Museum in New York collaborated with Apple to organize '[AR]T Walks' consisting of six AR projects by Nick Cave, Nathalie Djurberg and Hans Berg, Cao Fei, John Giorno, Carsten Höller, and Pipilotti Rist. The projects were located in public space and could be experienced by visitors during guided tours. Cao Fei's (b. 1978) AR work *Trade Eden* (2019), viewable in

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