

## CREATING CONTINUITY BETWEEN COMPUTER ART HISTORY AND CONTEMPORARY ART

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Computer art was started by a small group of pioneering artists who had the vision to see what digital tools and technology could bring to the creative process. The technology at the time was primitive, compared to what we have today, and these artists faced resistance from the traditional art establishment. Several organizations, such as the New York Digital Salon, were started to promote digital creativity through exhibitions, publications and websites. This paper will explore how to create continuity between computer art history and a new generation of artists that does not see making art with computers as unusual and views it as contemporary art.

### INTRODUCTION

The origins of computer art trace back over fifty years as artists began to experiment and create artwork with new technologies. Even before computers were invented, photography, radio, film and television opened up new creative territories. Many people point to the photographs of abstract images taken of an oscilloscope screen that Ben Laposky called *Oscillons* as some of the first electronic art images, which foreshadowed the development of computer art. While the system he used was essentially analog, the way in which the images were created was through mathematics and electronic circuitry. Another artist working at that time was Herbert Franke, and as the author of *Computer Graphics – Computer Art*, originally published in 1971, and followed in 1985 by an expanded second edition, he began to document the history of computer art and the artists who were involved. One of the first computer art competitions was begun in 1963 by the periodical *Computers and Automation*. A. Michael Noll created *Computer Composition with Lines* and won the prize in 1965, followed by Frieder Nake with *Composition in Squares* in 1966. The year 1965 also marked two seminal computer art exhibitions held at the Technische Hochschule in Stuttgart, Germany and the Howard Wise Gallery in New York City. These exhibitions were instrumental in fostering an increased interest in the aesthetic use of computing.

In 1966, *9 Evenings: Theatre and Engineering* was held in New York City. This event was collaboration among artists, computer scientists and engineers. It was also a key event to bring public awareness of new creative approaches to making art. Organized by Billy Kluver, Experiments in Art and Technology (E.A.T.) continued for many years to encourage this type of collaboration. The archives of E.A.T. now reside at La fondation Daniel Langlois in Montreal, Canada.

A few years later in 1968, the landmark exhibition *Cybernetic Serendipity*, organized by Jasia Reichardt, took place at the Institute for Contemporary Arts in London. Computer artists included in the exhibition were Charles Csuri, Frieder Nake, A. Michael Noll and John Whitney, among others. Other contemporary artists who worked with technology, sound art, music, and film included Nam June Paik, James Seawright, John Cage, Iannis Xenakis, Kenneth Knowlton and Nicholas Negroponte. The exhibition had three major components: 1) computer generated work, 2) cybernetic devices, robots and painting machines, 3) machines demonstrating the use of computers and the history of cybernetics [1].

Another exhibition the same year was *The Machine as Seen at the End of the Mechanical Age* at the Museum of Modern Art in New York City. It included the work of over a hundred artists and explored the relationship between art and technology. The establishment of the British Computer Arts Society and the publication of the first issue of the *Leonardo* journal by Frank J. Malina happened in the same year.

As one can see, 1968 stands out as a pivotal year in the development and international recognition of digital art. While this year was a highlight, and the interest in computer art did continue throughout the 1970s, Herbert Franke commented in 1985 that, “the expansive period of computer art is considered to have been finished by 1970 – the year of the first presentation of computer-generated graphics at the Biennale in Venice. The subsequent years were characterized among others by a different attitude towards the computer – its use for artistic purposes was no longer regarded as a provocation” [2]. While this may not have been ultimately been the case, the responsibility for the development, support and archiving of this art form at that time, and until now, has fallen primarily to visionary computer art organizations and galleries.

## **COMPUTER ART ORGANIZATIONS AND DIGITAL ARCHIVES**

As computer art developed, it faced resistance from the traditional art establishment. Computer art failed to fit into any standard traditional art category, such as drawing, painting or sculpture. Much of the work was non-archival, printed on plotters with inexpensive papers and inks and the technology used to make the artworks rapidly became obsolete. While these were a few of the valid concerns from the art world, it did not stop the pioneering artists from continuing to develop and experiment with this emerging art form. However, many of the museum shows during the 1970s and 1980s created far less excitement than computer art exhibitions generated in the late 1960s. As a result, several organizations and festivals that supported and believed in making art with technology began to emerge.

The first Ars Electronica Festival was held in Linz, Austria in 1979. It continues to this day, and recently an online Festival Documentation and Catalogue Archive was created that chronicles the thirty year history of the festival with all programs and catalogue texts published since 1979, the Archive of Prix Ars Electronica from 1987, and links to all festival websites since 1995. Starting with only 20 artists in 1979, Prix Ars Electronica grew to near five hundred artists in 2008.

In Germany, the ZKM Center for Art and Media was founded in 1980, was established as a government foundation in 1988, and has been a leader in the development of new media art since. Professor Peter Weibel took the helm in 1999 and expanded ZKM to include research in new media theory and practice, and the establishment and expansion of such resources as the

Museum of Contemporary Art, the Media Museum, Institute for Visual Media, Institute for Music and Acoustics and the Institute for Media, Education and Economics.

V2\_ in the Netherlands was founded in 1981 as an artist collective. Began as a center for multimedia performances and experimental media, it also included an exhibition space. The interest in these new art forms propelled V2\_ to evolve into a center for art and media in the mid-1980s. It published a *Manifesto for Unstable Media* in 1987, which laid the foundation for future development. Since 1994, it has focused on networked media art, and other forms of creative expression using digital media. The V2\_Lab was established in 1998 and extended their mission to artistic practice, research and the development of an online archive of creative work.

Started in 1988 as an International Symposium on Electronic Art, the Inter-Society for the Electronic Arts (ISEA) was founded in 1990 in the Netherlands. The goal of ISEA is to support an international awareness of the electronic arts. It has held both annual and biennial symposia at various locations around the world. In addition to the symposia, the archives of ISEA are maintained at the La fondation Daniel Langlois in Montreal, Canada and a more comprehensive archive website is currently under construction.

In the United States, ACM SIGGRAPH began their art exhibitions with the *Computer Culture Art* show in 1981. The works in the exhibition were a selection of digital prints taken from the *High Art Technology* show, which was exhibited at the Library of Congress in April of that same year. It included works by David Em, Herbert Franke, Ken Knowlton, Ruth Levitt, Lillian Schwartz, Joan Truckenbrod and Edward Zajec, among others. The SIGGRAPH Conference and Art Gallery continues to this day. The online archive of the Art Show currently includes the exhibitions from 1994-2007. In 2009, SIGGRAPH began an annual Distinguished Artist Award, which was given to Lynn Hershman Leeson and Roman Verostko.

## **NEW YORK DIGITAL SALON**

In 1993, SIGGRAPH decided to make their annual art show, *Machine Culture*, the first international survey of interactive and robotic art. As such, they did not include static art or digital prints. The New York Digital Salon was started as a “salon des refuses” to this art show. It was organized by the New York Professional Chapter of ACM SIGGRAPH, curated by the author and the jury consisted of Barbara Nessim, Judson Rosebush, Lillian Schwartz and Kenneth Snelson. One of the first exhibitions dedicated to digital prints in New York City, it was held at the Art Directors Club. Approximately sixty works were selected from over six hundred entries.

One unique aspect of this exhibition was that it was one of the first contemporary art exhibitions to be curated using a computer. SVA MFA Computer Art graduate student Fury Nardone-Sabato constructed a virtual gallery of the New York Art Directors Club using Autodesk 3D Studio software. Artworks were then scanned and re-formatted as texture maps onto planar shapes. These were then used to try out different exhibition layout scenarios in the gallery.

The positive response and curiosity sparked by the exhibition prompted a second show and the number of entries from artists increased significantly. This trend continued and the Third New York Digital Salon partnered with *Leonardo, Journal of the International Society for the Arts, Sciences and Technology*, to create a special annual issue as the catalogue of the exhibition.

This continued until 2003, when the New York Digital Salon celebrated its tenth anniversary. One of the reasons for the partnership was to develop a body of literature about digital art, along with the exhibition.



First New York Digital Salon Catalogue

8<sup>th</sup> New York Digital Salon in Malaga, Spain

Over the years, the concept of the exhibition had expanded from being a digital print only exhibition into a more comprehensive and inclusive venue for all types of digital art. This included prints, installations, sculpture, computer animation and web sites. 1998 also marked the first international venue for the exhibition. Blanca Mora, an art consultant from Spain brought the exhibition to the Circulo de Bellas Artes in Madrid. At that time, curiosity about digital art in Spain was high, and the opening reception drew over one thousand people, and the exhibition hours had to be expanded so that school groups could come to the exhibition in the mornings. Total attendance for the one-month exhibition exceeded ten thousand.

After being the curator of the first three exhibitions, the author took over as the Director of the New York Digital Salon in 1998. Following the success of the Madrid venue, additional venues were added, including the Centre de Cultura Contemporània de Barcelona, and the Sala de Exposiciones in Alicante and Malaga, Spain, as well as the Triennale de Milano in Italy. During this period of the salon's development, and in response to the requests of large international contemporary art venues, we decided to stabilize the format of the exhibition to include approximately forty prints, four to five CD-ROM or disk-based works, eight to ten installations, five to ten Web sites, and about an hour each of computer animation and digital video. The large size of the contemporary art centers in Europe allowed us to place interactive works in their own rooms, as well as have screening rooms for the computer animation and digital video works. The number of artists submitting works had now grown to approximately one thousand, and artists from fifteen to twenty countries were being represented. This was the result of several factors, including an increased number of submissions, international publicity and venues, as well as a conscious effort to make the New York Digital Salon more representational of the international digital art movement.

With the Seventh New York Digital Salon, we began to create a permanent online archive of the exhibitions. The exhibition had developed a significant history and interest in digital art was very high during this period. It became obvious that there was a need for an online archive for the New York Digital Salon. Currently, most of the exhibitions can be found at [www.nydigitalsalon.org](http://www.nydigitalsalon.org). Efforts are under way to finish a complete online archive of all the exhibitions, and increase the content, links and supplemental information. The goal of the Salon's web site is to become a useful resource of information on digital art, including

information about the exhibitions, links to other sites, and Webcast lectures and panel discussions featuring artists, curators, and art historians. The further development of the web site is a major priority for the future.



10<sup>th</sup> New York Digital Salon in New York City in 2003

In order to mark its tenth anniversary, the organizers of the New York Digital Salon decided to do something different. While the previous nine salons had been selected by curators and a jury, it was felt that it was time to have a more comprehensive international view of digital art represented. In 2001, there were major exhibitions of digital art at the San Francisco Museum of Modern Art, Whitney Museum of American Art, and the Brooklyn Museum of Art. The original goal of the New York Digital Salon in 1993 was to establish an annual venue for computer art in New York City. Eight years later, there were two major museum exhibitions of digital art in New York City. We felt that the goal had been achieved and that it was time to make a major statement about computer art. Since the trend for the past several years had been to take a more comprehensive international view of digital art, a survey exhibition was decided upon. While there are many international organizations involved in digital art, as mentioned above, there had been no recent major cooperative projects. During our research, we also learned that there were no major museum exhibitions of digital art being planned for the 2002-2003.

The New York Digital Salon has historically operated outside the established art community, and we also thought it would be important to invite curators from major museums and institutions to select the work for the tenth anniversary. A large group of curators would eliminate personal biases and provide a wide variety of viewpoints, as well as reinforce the new sense of legitimacy that digital art was gaining in the contemporary art world. The curators selected for the Tenth New York Digital Salon included Christiane Paul, Adjunct Curator of New Media Arts at the Whitney Museum of American Art; Jon Ippolito, Assistant Curator of Media Art at the Guggenheim Museum; Gregor Muir, Kramlich Curator of Contemporary Art at the Tate, London; Steve Dietz, Director of New Media Initiatives at the Walker Art Center; Benjamin Weil, Curator of Media Arts at the San Francisco Museum of Modern Art (and Chief Curator at Eyebeam, New York); Yuko Hasegawa, Chief Curator 21st Century Museum of Contemporary Art, Kanazawa, Japan; Joel Chadabe, President, Electronic Music Foundation; Lev Manovich, Associate Professor, University of California, San Diego and a representative from the ZKM Center for Art and Media, Karlsruhe, Germany. Joel Chadabe's charge was to focus on music and sound art works, and Lev Manovich was asked to select ten important books or writings on digital art. We asked all of the curators to define

“works that have changed and are changing the course of art and music history, from the earliest days to the present, with an eye on the future.”

We gave the curators a wide range of freedom in their choices in order that the history of computer art be represented fully, rather than narrowly defined. We asked them to look at this project as more of an art historical process rather than trying to have everyone agree on a specific selection of works for a single exhibition. This freed them from the constraints imposed by a specific set of dates, arranging for the works to be exhibited, and a particular venue. With this approach, we also believed that it was more important than ever to bring the curatorial perspective into play. This was the reason why we brought together a group of international curators in the first place. It is through their eyes that we can see and learn how to decipher the evolving aesthetic that is digital art. Due to financial constraints, the exhibition at the World Financial Center in New York City was a small selection of the one hundred works included in the Leonardo catalogue. A comprehensive web site was created that included all the works selected, as well as essays by the curators. We also had a timeline of computer art and technology at the entrance of the exhibition to educate viewers how the creative work was situated in relation to the development of technology. [3]

## **THE FUTURE OF THE NEW YORK DIGITAL SALON**

The New York Digital Salon has entered a new phase of its development since the tenth anniversary in 2003. Our original mission of providing an annual venue for digital art in New York City has been accomplished, as evidenced by the growing number of major museum and gallery exhibitions and their recognition of digital art as a major force in contemporary art.

We have now shifted the focus of the New York Digital Salon away from being an large open call annual exhibition to being involved in the development, exhibition, interpretation, and recognition of international digital art. The smaller annual salon exhibitions have expanded their scope by including new mediums of digital art, computer animation, digital video, interactive installations, CD-ROMs, digital audio and music, and other emerging digital technologies.



Web image from the 2006 New York Digital Salon Technocultures Panel Discussion

Public lectures and panel discussions have been presented in the United Kingdom, Italy, Japan, Korea, Hong Kong, Xian and Beijing, China, and throughout the United States. We now provide public programming, exhibitions, and events on a year-round basis under the umbrella of the New York Digital Salon Touring Program, and have received support from organizations including the National Endowment for the Arts, the Rockefeller Foundation and the New York State Council on the Arts. The web site will continue to be expanded as an online archive and resource for digital art. In March, 2009, we partnered with the Computer Art & Technocultures project to present *The History of Computer Art: A Conversation*, featuring pioneer artists Ken Knowlton, Margot Lovejoy, Lillian Schwartz and Kenneth Snelson. The panel discussion was videotaped and is archived on the Website. The New York Digital Salon will continue its mission as a leading proponent of international digital art and hopes that contemporary art will remain a vital force for promoting cultural exchange and understanding.

### **MERGING WITH CONTEMPORARY ART**

The merging of digital art with contemporary art began many years ago and is accelerating, as a new generation of artists are producing creative work using digital tools and techniques. The resistance that the traditional art establishment showed against digital artists has weakened. Painters, sculptors, and installation artists are all using digital tools, if not as their final medium, but at the minimum, as an important adjunct to their creative inspiration and process. For example, young painters now routinely use Adobe Photoshop as a conceptual tool for their final work. Installation artists use 3D and other software tools to visualize and sketch out their installations, before they begin construction. Museums and galleries often prefer to have digital visualizations of the final installation and exhibition as part of their planning process.

### **CONCLUSION**

Whether it is called Computer Art, Digital Art or Contemporary Art, the importance of rewriting and filling in the gaps in contemporary art history is paramount. There exists a huge vacuum of information between the 1960s and about the year 2000, when the traditional art community originally resisted and rejected Computer Art and has now finally begun to see it as Contemporary Art. The reasons were many. Early computer art did not fit into any traditional art category. There were some serious archival issues, as early plotter prints, photographs and other digital output was done with media not designed to be archival. There were tremendous technical complications, included the brief longevity of operating system software and equipment to support this type of creative work. While this was certainly significant in the 1960s and 1970s, rapid developments in technology and software also had a profound negative effect on Net Art. During the emergence of the Worldwide Web (www) in the mid-1990s, Internet software had a half-life of about six months and Net Art works often became obsolete or difficult to archive within a year of their creation. We are now fortunate that there are ways to preserve and revisit computer art. Emulation software is revitalizing obsolete operating systems. Also, many artists are porting their original works over the new platforms that are more accessible to a wider audience.

All of these activities contribute to the preservation and placement of Computer Art history into the mainstream of Contemporary Art. As these efforts continue, and as the new generation of artists create a body of work that seamlessly employs digital and traditional techniques, we will finally see a true merging of creativity between the traditional and the digital.

## References

- [1] MacGREGOR, B: Cybernetic Serendipity Revisited. *2002 Proceedings of the Fourth Conference on Creativity and Cognition, Loughboro, UK, pp. 11-13.*
- [2] FRANKE, H. W., *Computer Graphics–Computer Art*. 1985, Berlin, Heidelberg, Springer Verlag, Germany.
- [3] WANDS, B., *Art of the Digital Age*, 2006, Thames & Hudson, London, UK

## Recently Published Surveys of Digital Art

Oliver Grau, *Virtual Art: From Illusion to Immersion*, 2003, MIT Press, Cambridge, MA, United States  
Margot Lovejoy, *Digital Currents: Art in the Electronic Age*, 2004, Routledge Press, 3<sup>rd</sup> edition, New York, NY, United States  
Christiane Paul, *Digital Art*, 2008, Thames & Hudson, 2<sup>nd</sup> edition, London, UK  
Frank Popper, *From Technological to Virtual Art*, 2007, MIT Press, Cambridge, MA, United States  
Edward Shanken, *Art and Electronic Media*, 2009, Phaidon Press, London, UK  
Bruce Wands, *Art of the Digital Age*, 2006, Thames & Hudson, London, UK  
Stephen Wilson, *Information Arts*, 2002, MIT Press, Cambridge, MA, United States

## Digital Art Online Archive Links

There are many organizations that maintain online archives on digital art. The ones listed below will provide a good starting point for research in this area.

[www.aec.at](http://www.aec.at)  
[www.dam.org](http://www.dam.org)  
[www.fondation-langois.org](http://www.fondation-langois.org)  
[www.isea.org](http://www.isea.org)  
[www.leonardo.info](http://www.leonardo.info)  
[www.nydigitalsalon.org](http://www.nydigitalsalon.org)  
<http://rhizome.org>  
[www.siggraph.org](http://www.siggraph.org)  
[www.technocultures.org](http://www.technocultures.org)  
[www.virtualart.at](http://www.virtualart.at)