Never absent! Women and digital art since 1961

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#艺术现场

始于1961年的
女性与数字艺术
*Always Present:*
Women in Digital Art Since 1961

Remember your first email address?

Today, most readers may have had their own email address since they entered school or earlier. However, just 30 years ago, email addresses were just beginning to become widely popular. Before the emergence of familiar email services such as hotmail and Gmail, many email addresses were extremely cumbersome, usually consisting of a series of numbers, periods and underscores, and finally ending with ".com".

In September 2024, the exhibition "Radical Software: Women, Art and Computers 1960-1991" which just opened at the Grand Duke Museum of Modern Art in Luxembourg (MUDAM) aims to showcase the contribution of women to the development of computer technology through an artistic perspective and correct the historical neglect of women's contributions.
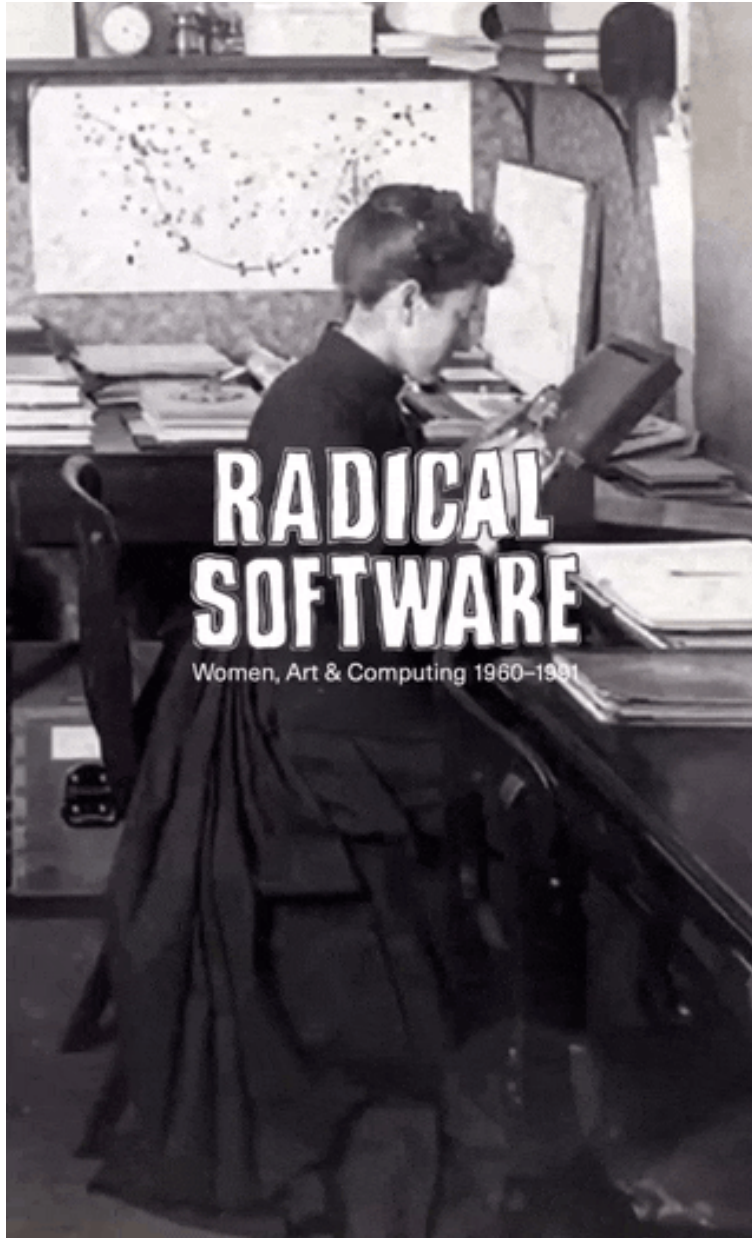
Radical Software: Women, Art, and Computers 1960-1991 @MUDAMLUX
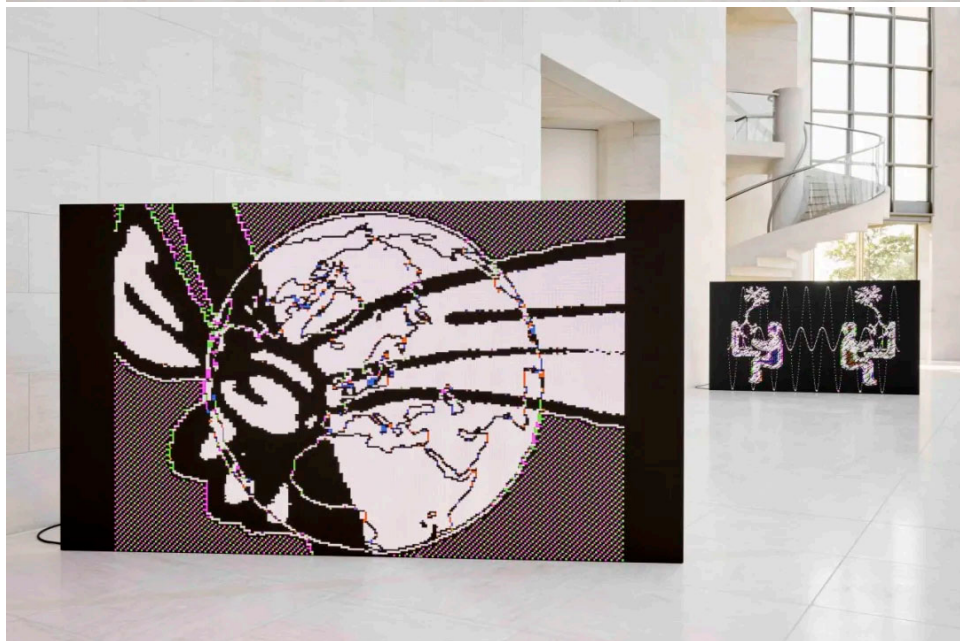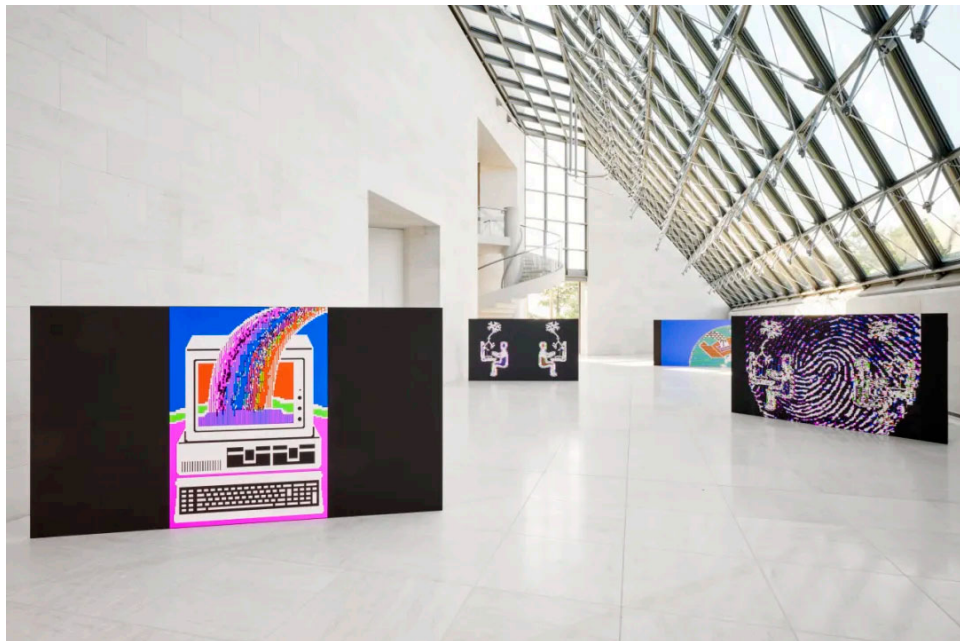
"Radical Software: Women, Art, and Computers 1960-1991"
Exhibition view, 2024.09.20 - 2025.02.02
Luxembourg Grand Duke Museum of Modern Art, Photo by Mareike Tocha
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In order to trace the voices of female artists in the context of these early technological explorations, Peifen Sung, a special contributor to BAZAAR ART , came to Luxembourg, located in the heart of Europe, in September to explore the wisdom and creations of female artists in the early wave of technology.

Grand Duke Museum of Modern Art, Luxembourg ©MUDAM Luxembourg

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author   Peifen Sung

She has lived in Europe for many years and has been a freelance writer for Chinese media such as FT Chinese, Harper's Bazaar, National Geographic, Tencent Culture, GQ, etc. She has covered a wide range of topics and has traveled all over the world. Sometimes she has a way to get to places that even locals can't enter! She is good at obtaining first-hand information, interviewing the most popular

people, and reporting to readers in a simple and moving way from the perspective of personal experience.

用艺术视角
看电脑技术发展

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以人为中心的设计理念融入科技。

In mid-September, in the small and exquisite city of Luxembourg, Europe, I met Tamiko Thiel .

Amazingly, she already had her own email address back in 1979! "I was dating a guy at Xerox PARC, and in order to attend his wine tastings, I had to have an email address," Tamiko recalls with a laugh.

Artist Tamiko Thiel

Although she can no longer remember the email address from nearly 50 years ago, she still remembers clearly that the domain name consisted of her initials (TNT) and was probably a subdomain of the main domain name mit.edu. And that subdomain may just be a simple combination of letters and numbers.

Tamiko's 1984 work Exploratory Sketch: Possible Forms of the Connector Machines CM-1 and CM-2 is on display in the exhibition Radical Software: Women, Art and Computers 1960-1991 at the Musée du Grand Ducal de Luxembourg (MUDAM).
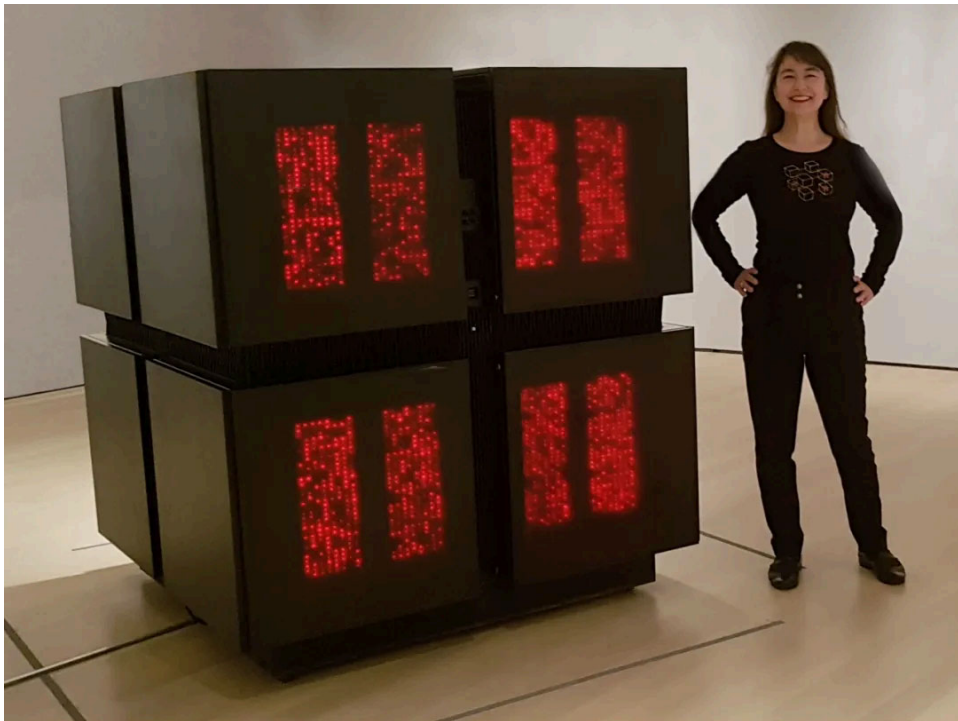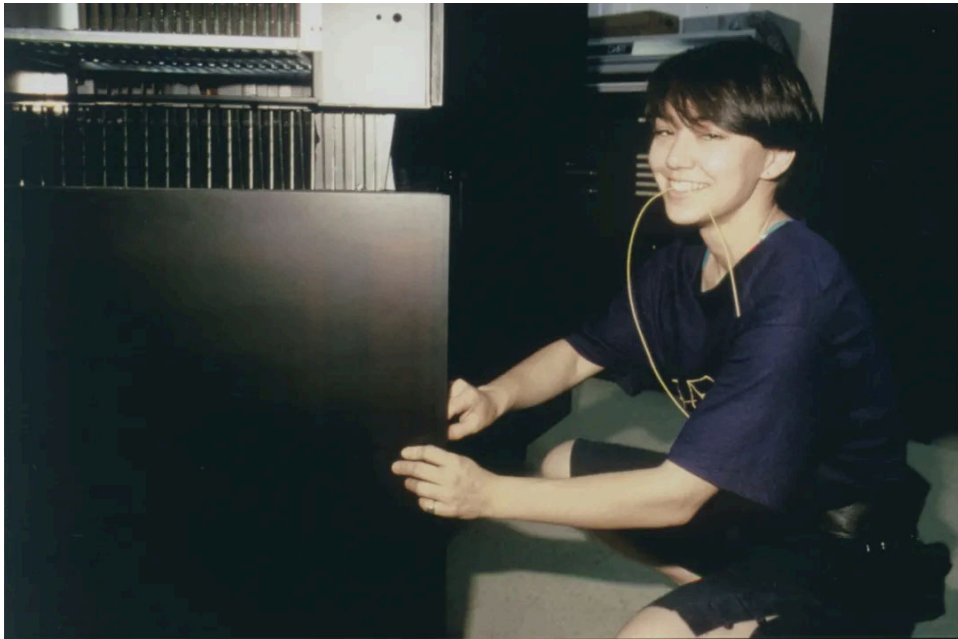
Above: Tamiko is making a prototype of the CM1, 1985-05
Below: Tamiko and CM2 at MoMA, 2017

The exhibition, which shines a light on often-overlooked women in digital art , is curated by Michelle Cotton and features more than 100 works by 50 female artists from 14 countries, spanning the 1960s to 1991, before the advent of the World Wide Web.
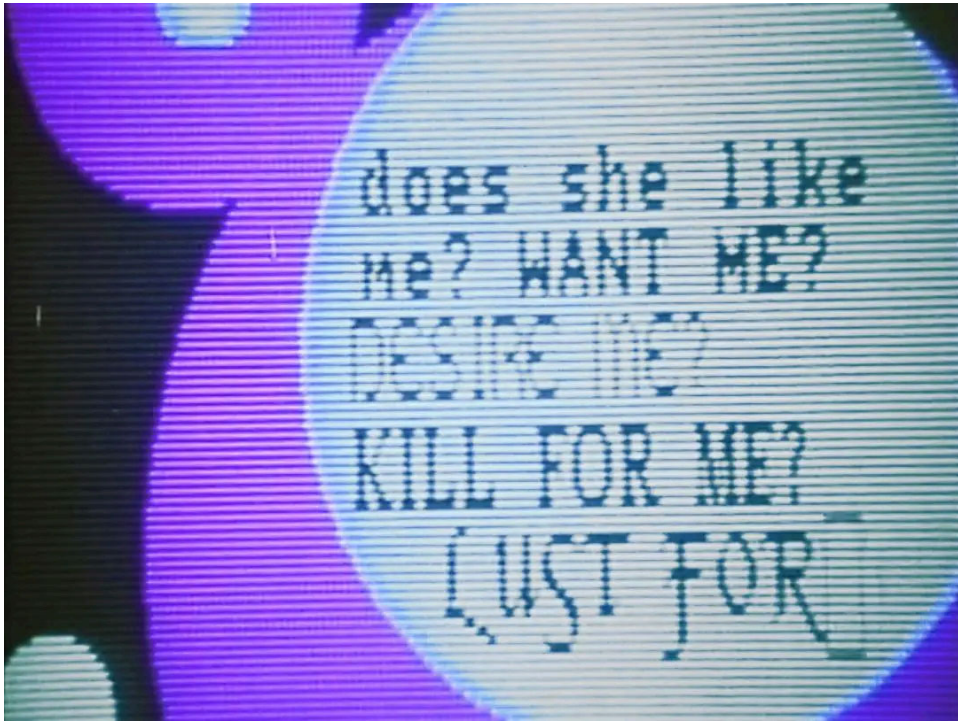
Barbara Hammer, No Nooky TV
1987, transferred to 16mm film, color, sound, 12 minutes,
Film stills courtesy of Barbara Hammer, estate and KOW Berlin

The exhibition focuses on the pre-Internet era, especially the intersection with the second-wave feminist movement, showcasing women's diverse attempts and breakthroughs in combining art and technology.
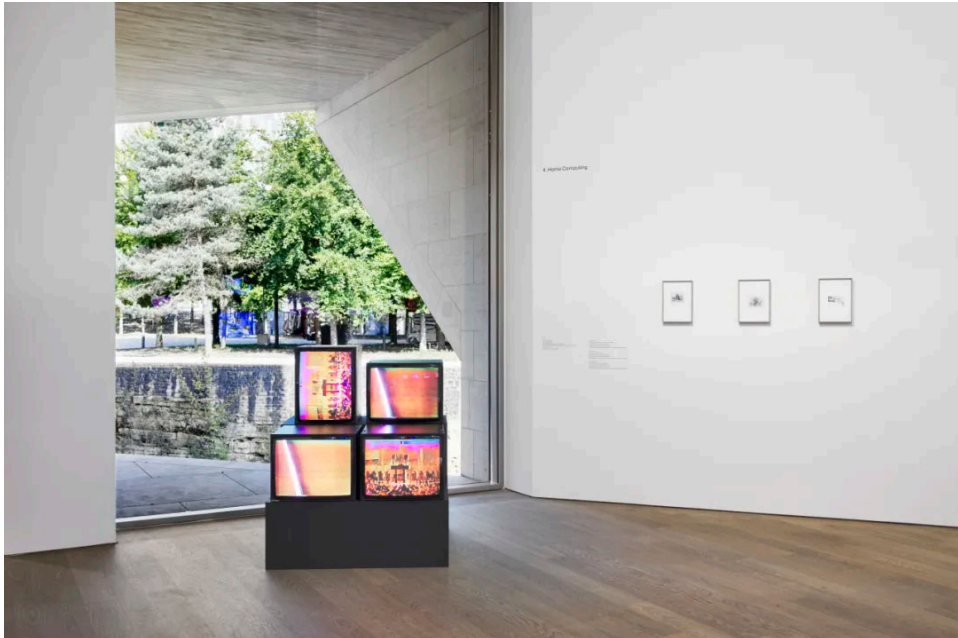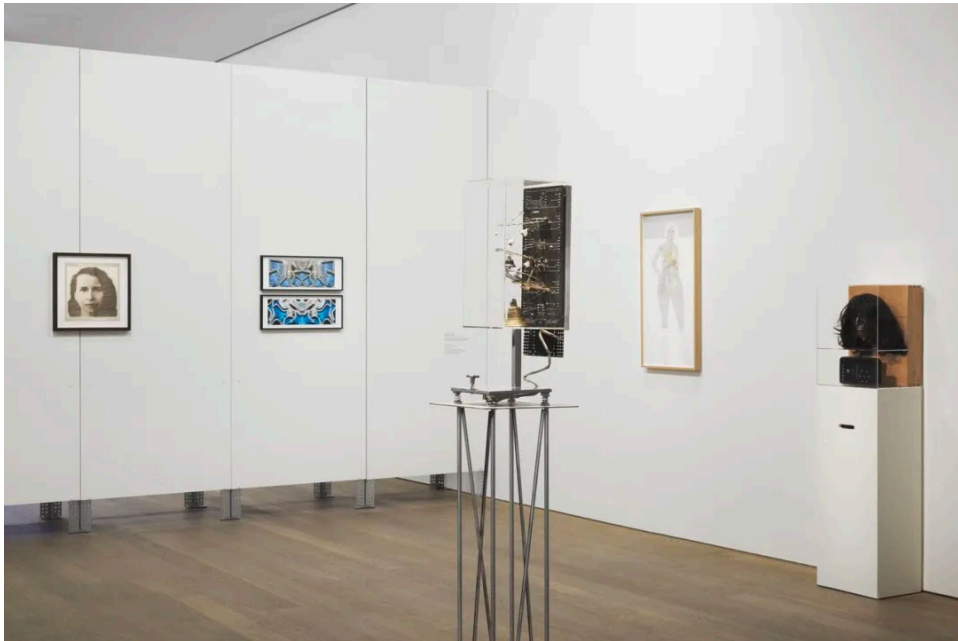
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In the 1960s to 1980s, mainframe computers were the main tools for artistic creation. Although they were expensive and difficult to obtain, artists still explored computer art creation through limited opportunities such as collaborations with universities or research institutions.
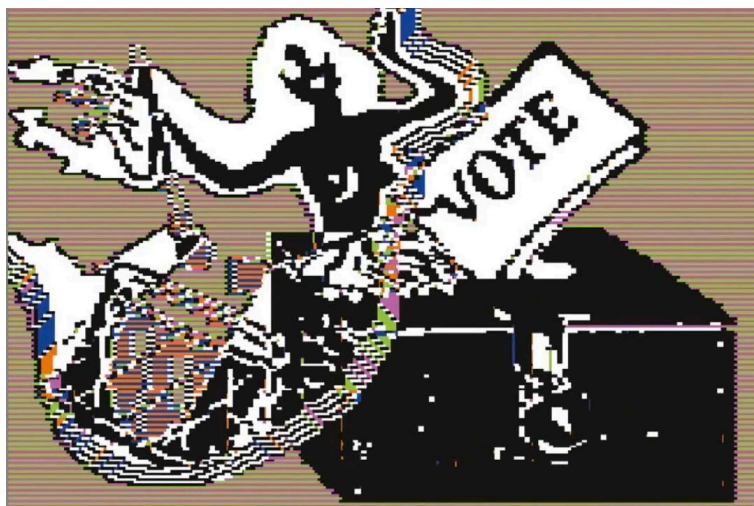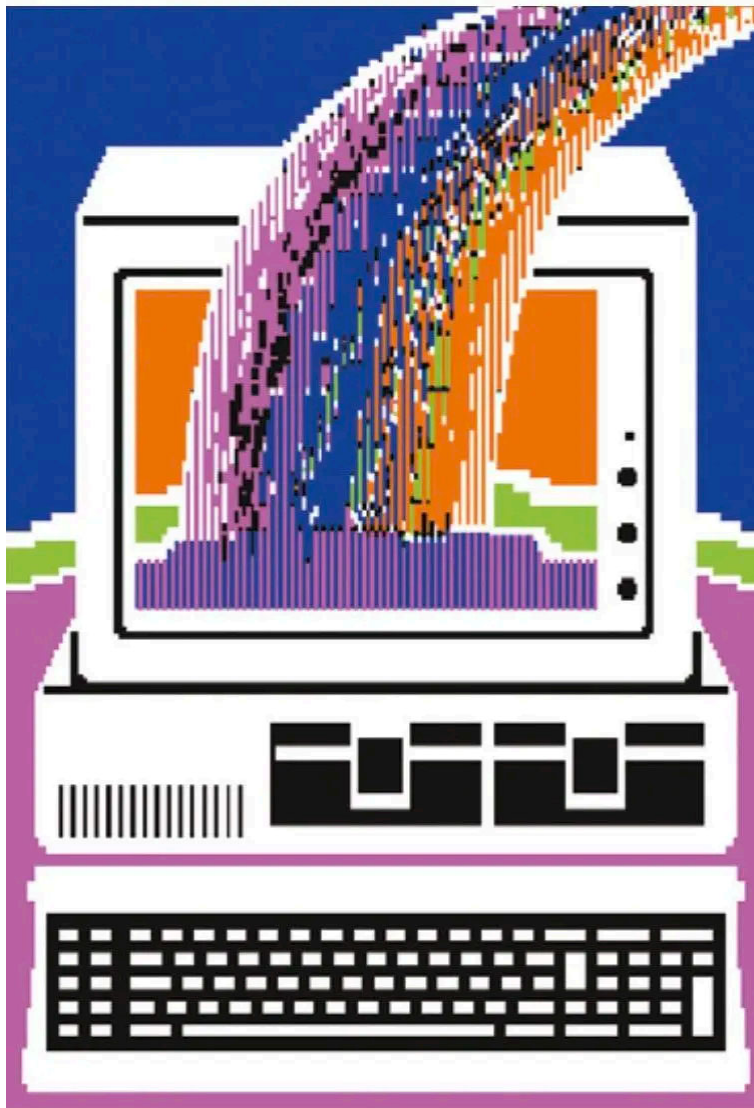
Charlotte Johannesson, Untitled,
1981-85 Digital computer graphics,
Courtesy of the artist and Hollybush Gardens, London

Charlotte Johannesson, Untitled,
1981-85 Digital computer graphics,
Courtesy of the artist and Hollybush Gardens, London

Tamiko began designing human-computer interfaces in 1974, a field that was still in its infancy. She graduated from Stanford University in 1979 with a degree in product design engineering, but it was her freshman mentor, an experimental physicist, who opened her eyes to computer programming, allowing her to teach herself FORTRAN from IBM manuals.

Although the conditions were limited and she could only write programs on an electric typewriter and obtain output results on paper, this experience laid a solid foundation for her future career in science and technology.

In 1983, after graduating from MIT's Mechanical Design Engineering Department, Tamiko immediately joined Thinking Machines Corporation, a startup founded by her friend Danny Hillis.

There, Tamiko led the product design team for the supercomputer Connection Machine CM-1/CM-2. This project was inspired by the structure of the human brain and aimed to create intelligence by simulating the rich connections between neurons. Tamiko and Danny turned this concept into reality. The machine they designed used 65,536 small 1-bit processors to form a complex network.
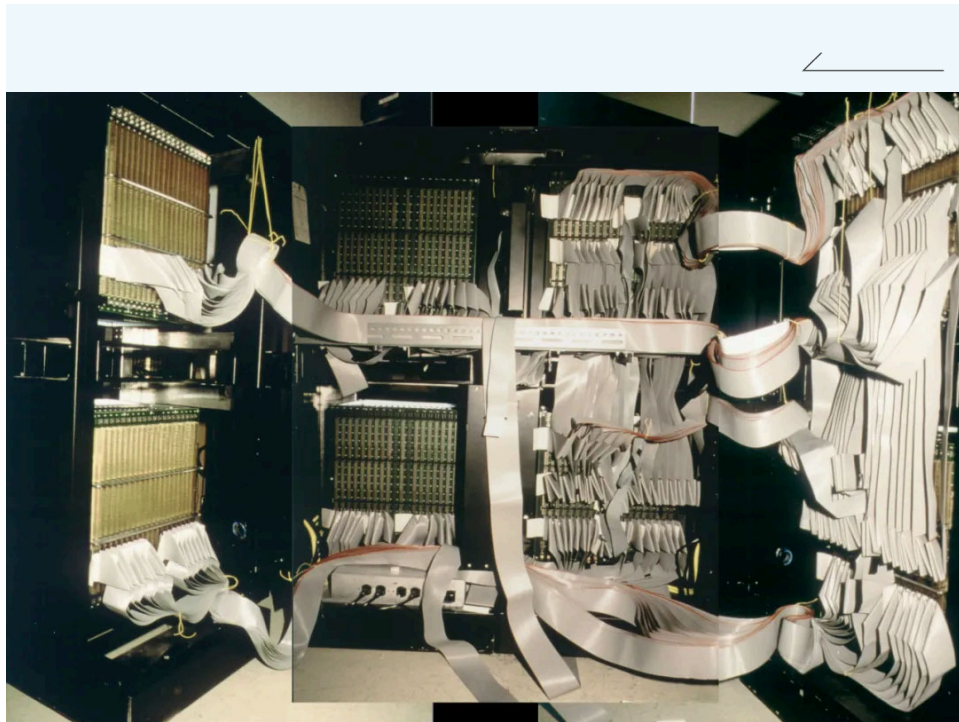
CM1 Cable Simulation Prototype Composite Material, 1984-1985

In this process, Tamiko not only utilized her knowledge of computer architecture, but also made full use of the " human-centered design " concept she learned in the Stanford Product Design Department.

The design process of Connection Machine was full of challenges and innovations. Tamiko needed to transform the abstract concept of the 12-dimensional space supercube suggested by Nobel physicist Richard Feynman for the internal processor network into a concrete wiring diagram, and by cleverly adjusting the network structure, she finally created the unique design of " cube of cubes ". In terms of the visual design of the machine, she worked with industrial designers to create a hard black cube, but with transparent doors inside, allowing the status lights of the 4096 processor chips to blink, showing the spectacular sight of the machine running in parallel.

CM-1, 1986

Tamiko's talent was not only recognized by the industry, but also attracted the attention of technology giants. Many years later, a friend of hers (Steve Jobs' former right-hand man) told her that after seeing the Connection Machine CM-1, Steve Jobs tried to contact Tamiko, hoping that Tamiko could design the appearance for his NeXT computer. However, Tamiko had moved to Munich to study art, and since there was no email in Germany at that time, Steve Jobs could not contact her.

Although they failed to collaborate at the time, Tamiko's design ideas had a profound influence on Jobs, even using a photo of Richard Feynman wearing a T-shirt with her "thinking machine" logo in his "Think Different" poster campaign.

Photo of Richard Feynman wearing a T-shirt with the "Thinking Machines" logo designed by Tamiko

Tamiko is particularly prominent as a woman in the technology industry. Not only has she achieved remarkable success in a male-dominated field, she has also actively advocated for women. She believes that although she often receives support from men, she still needs to prove her worth by publishing articles and showcasing her work.

She stressed that women still face challenges in the field of science and technology , but they should firmly believe: "Never let anyone tell you that you can't do anything."
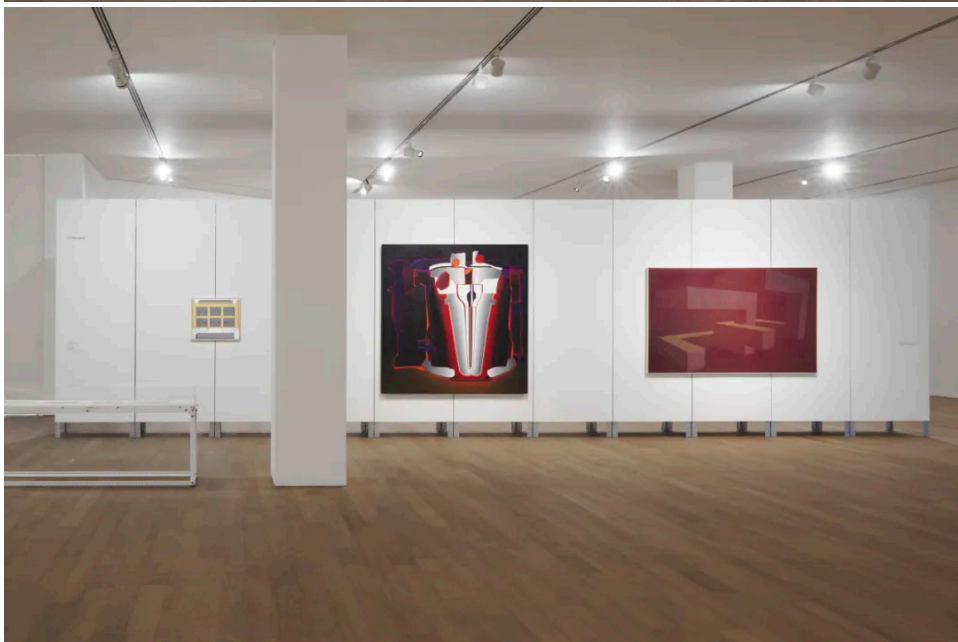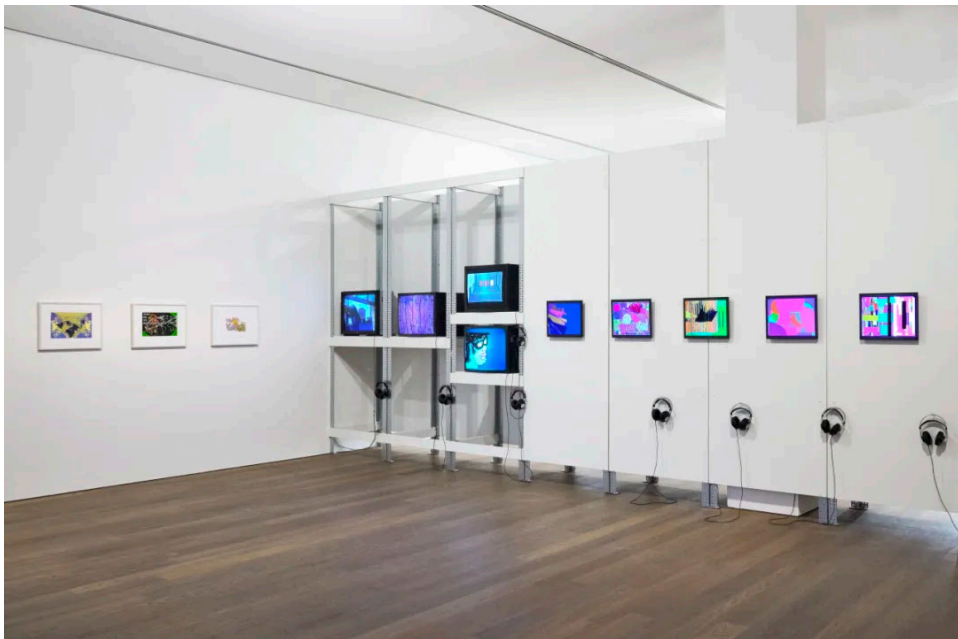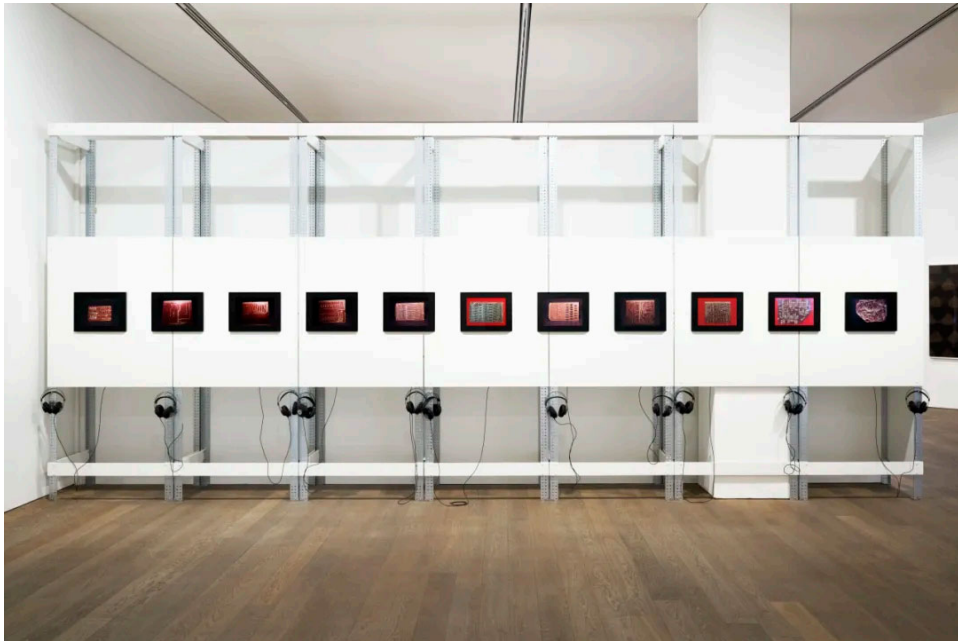
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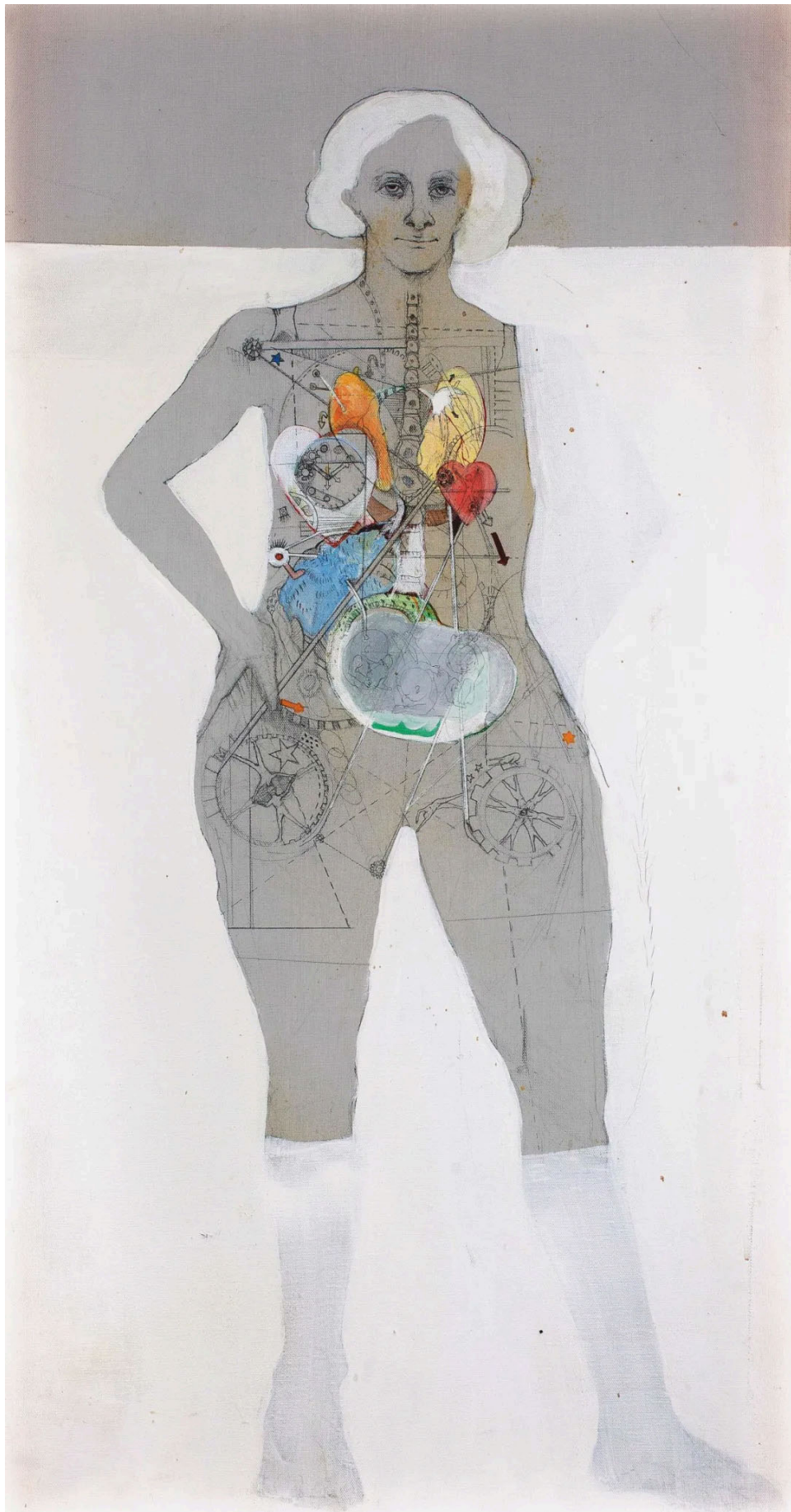Exhibition view, 2024.09.20 - 2025.02.02
Luxembourg Grand Duke Museum of Modern Art, Photo by Mareike Tocha
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塑造了科技艺术史的她们 ｜ 2

将技术融合艺术的多样探索。

Lynn Hershman Leeson, X-Ray Woman, 1966
Pencil, acrylic, pen on canvas
Courtesy of the artist, Altman Siegel, San Francisco , and Bridget Donahue, New York

In the exhibition, we can appreciate the diverse explorations of different female artists in integrating technology into art . The works are in various forms, including painting, sculpture, installation, film, performance and computer-generated art creation. These works

not only demonstrate the technical capabilities of the artists, but also reflect their innovation in artistic expression.


Sonia Sheridan, In Time, inkjet print,
1985 by the Daniel Langlois Foundation for Arts, Sciences and Technology,
Courtesy of the Sonya Landy-Chedan Foundation and the Cinémathèque du Québec collection


Dara Birnbaum, Pop-Pop, Video: Kojak/Wang
1980, video, color, sound
Courtesy of Dara Birnbaum and EAI New York

For example, artist ISA Genzken, who represented Germany at the Venice Biennale in 2007, created a series of unique ellipsoidal and hyperbolic sculptures between 1976 and 1983 based on computer graphics she created with physicist Ralph Krotz at the University of Cologne.
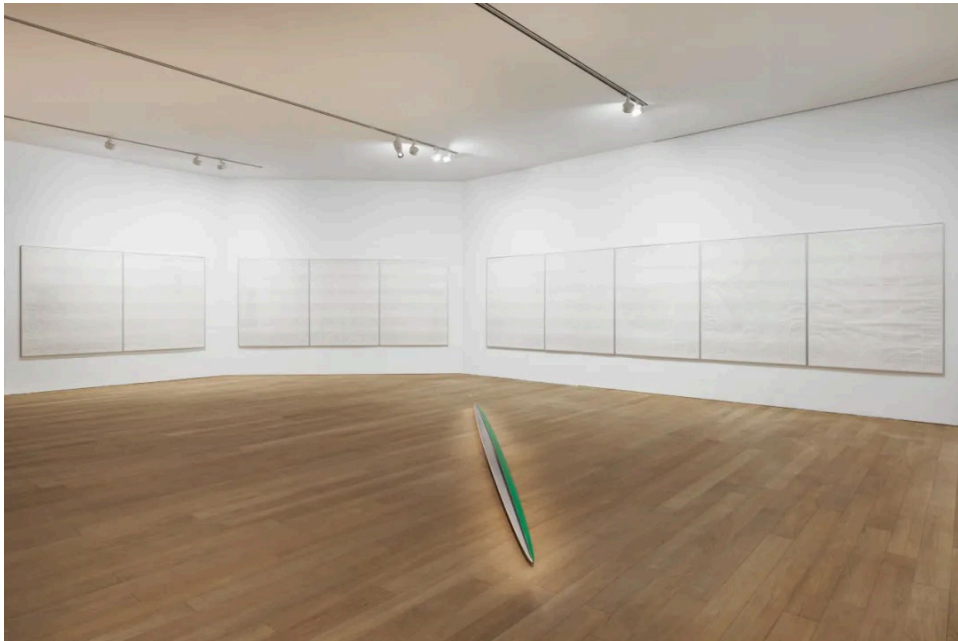
Grau-grünes o enes Ellipsoid, 1977
From the collection of the Stuttgart State Art Gallery, acquired in 1979
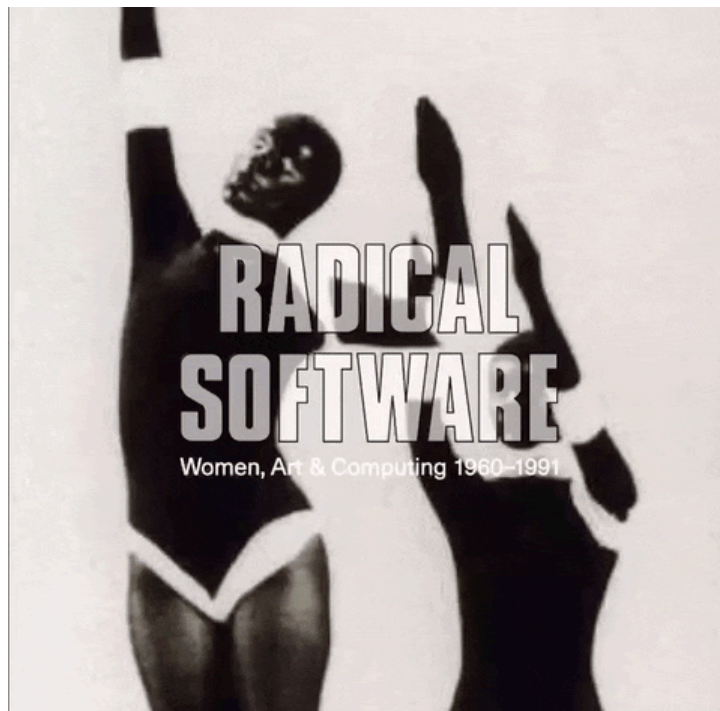
Radical Software: Women, Art, and Computers 1960-1991 @MUDAMLUX

Austrian artist Valie Export is known for her provocative performances and expansive film work that not only challenges social norms but also pushes the boundaries of feminist art.

Among them, her most famous work, Action Pants: Genital Panic (1968), bravely walked in a Munich cinema with her genitals exposed, allowing the audience to face the female body in a shocking and empowering way.

This move, along with her other works that explored themes of gender, identity, and the body, established her as an important figure in the feminist and avant-garde art movements.

Valie Export, Stand Up. Sit Down,
1989, digitally processed photography, courtesy of the artist

In this exhibition, we can also see her profound exploration of the relationship between the human body and architecture. She photographed the body structure in architecture and nature, and later began to use computers to process it, aiming to use the representation of digital cities, integrating digital media, photography and analog media to show her unique artistic perspective.

Valie Export, Selbstportrait mit Stiege und Hochhaus
1989, digitally processed photography, courtesy of the artist

French artist Dominique Gonzalez-Foerster presented her 1989 text film Ada en ADA.

This 8-minute tragic computer script vividly tells the life story of Ada Lovelace. As the world's first programmer, Lovelace not only demonstrated extraordinary talent and foresight, but was also a pioneer in the combination of technology and art. She was the daughter of the famous poet Lord Byron, but she found her own stage in mathematics and science. In 1842, she designed the first computer program for Charles Babbage's analytical engine. This pioneering work not only marked an important milestone in computer science, but also highlighted her unique contribution to this field. Although her life was short, Lovelace's name is forever engraved in the history of computer science.

Not only does Ada en ADA delve into intimate details about Lovelace's family tree, descendants, mental health, physical decline, and death, it also impresses with its in-depth attention to the facts, going beyond what is commonly found in obituaries and encyclopedias.

This woman, now widely hailed as the first computer programmer, is attacked by a "monster" of her own invention. In Ada en ADA, Lovelace's life (or traces of it) is calmly processed and presented by a machine, as if foreshadowing some hidden worries that may arise from technological development.

ADA.MALADIES : CARNET_DE_SANTE [1815…1852] :=

[1823 =) MAUX_DE_TETE [IMPORTANTS],

1829 =) ROUGEOLE [SEQUELLES =) PARALYSIE_TEMPORAIRE],

1835 =) DEPRESSION_NERVEUSE [LEGERE],

1837 =) AUTRE_MALADIE [GRAVE],

1841 =) DEPRESSION_NERVEUSE [GRAVE],

1851 =) HEMORRAGIES,

1852 =) CANCER,

others =) ETAT.CYCLOTOMIQUE];

Ada en ADA was created in the early days of personal computers, two years before the public launch of the World Wide Web, at a critical moment of cultural change. Computers, software, and Internet communications are now widely used in countless contemporary art forms and fields, and are not only deeply rooted in contemporary art creation, but also an important part of contemporary art discourse.
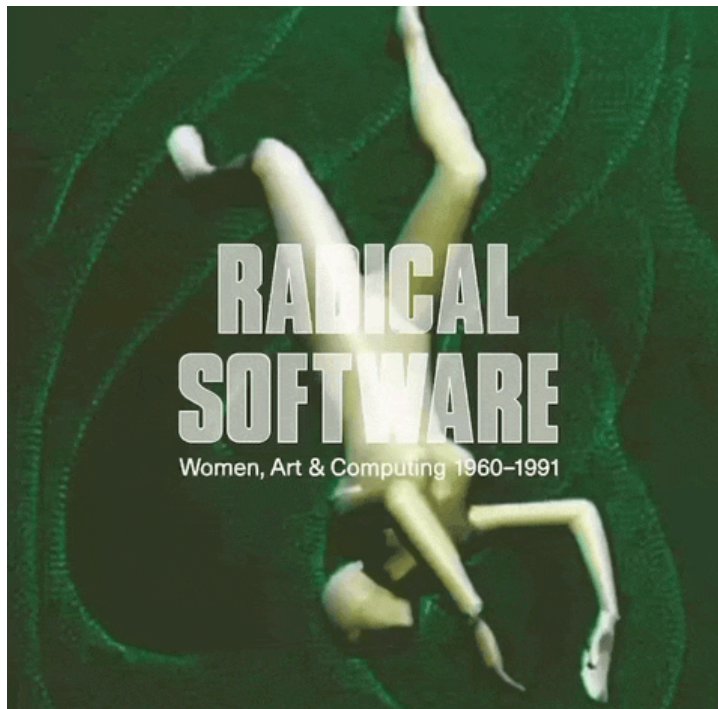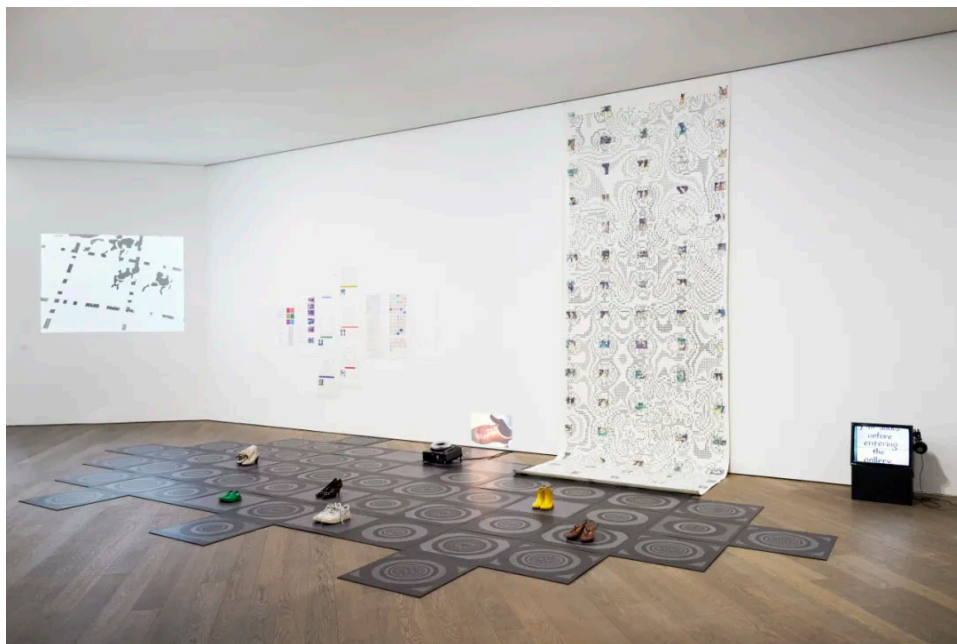

Radical Software: Women, Art, and Computers 1960-1991 @MUDAMLUX

重新审视数位艺术的历史 | 3

历史上最早的消费者数据研究。

Although the theme of the exhibition is digital and technological, many of the works on display are actually very "traditional".

Examples include drawings on paper, computer printouts, paintings, photography, textiles and sculptures. One of the most dynamic works in the exhibition hall is undoubtedly Sonya Rapoport's Shoe-Field, a complex installation that includes floor tiles, data charts and several pairs of shoes.

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The project began in 1982 when she began creating this unique interactive art at a home computer store in Berkeley, California.

Sonya Rapoport, Shoe-Field, 1982–89
Installation at Media Gallery, San Francisco, 1986
Courtesy of the Estate of Sonya Rapoport, Photo by Marion Gray

Rapoport collected information about participants' shoes, as well as how and why they liked them, and used a computer to determine each person's "shoe syche."

After seven years of repetition and accumulation, she finally built a huge database containing more than 60 images and printed dot-matrix ASCII maps based on 76 research objects, which were carefully calculated using the inverse square law in electromagnetic field theory in collaboration with programmer John Watson.

Original pair had good times.	Sweaty feet keep me warm.	It saves ruining a good pair.
Half price for my ugly shoes!	I'm cinderella today!	Black shoes for business.
In Boston for concert dress.	Over six feet tall & sexier.	A northwoodsman romping in mud!

Sonya Rapoport, Shoe-Field, 1982–89
Original photographic collage, published in High Performance, Vol. 22, No. 66, 1983
Courtesy of the Estate of Sonya Rapoport

In later iterations of Shoe-Field, Rapoport took human-computer interaction to a new level.

She asked participants to hand over their shoes and fill out a computer-based questionnaire, in return for which they received a "fortune cookie-cutter" reading and their "shoe-psyche" pattern, which compared their shoes to other shoes they dreamed of owning.

Sonya Rapoport, Shoe-Field, 1982–89
Original photographic collage, published in High Performance, Vol. 22, No. 66, 1983
Courtesy of the Estate of Sonya Rapoport

In an age of increasingly pervasive data collection and the widespread use of human-computer interaction to gather consumer data, Rapoport's work is both unique and prescient. The artist, who was born in 1923 and died in 2015, began working with discarded computers in the mathematics department at the University of California, Berkeley, in the mid-1970s, when computers were still new to most people.

She used these machines to collect and present data on a variety of topics, from economics to human psychology to our intimate relationship with everyday objects, making her work full of contemporary and forward-looking. Not only is she considered an "early adopter of Internet technology" , she also began publishing some of her works on floppy disks in 1988 and began providing her interactive works through the computer network in 1989, further proving her leading position in the field of integrating art and technology.

Shoe Field is more than just an interesting art installation. Today, as brands are leveraging the power of consumer data to customize their marketing strategies and influence purchasing behavior, we must never forget that Rapoport started consumer data research as early as 1982!

In the long process of exploring the integration of technology and art, it is not difficult to find that software publishing has played an important role in sharing information and art and promoting its democratization before the birth of the Internet. Compared with print and broadcast media, software, with its unique interactivity, heterogeneity and theoretical accessibility, provides users with diverse experiences and multiple outcomes.

It was the limitless potential of software that inspired three artists, Beryl Korot, Phyllis (Gershuny) Segura and Ira Schneider, to co-found a magazine called Radical Software in 1970 as a metaphor and powerful tool for social change. That's why the curators decided to use the magazine's name as the title of the exhibition.
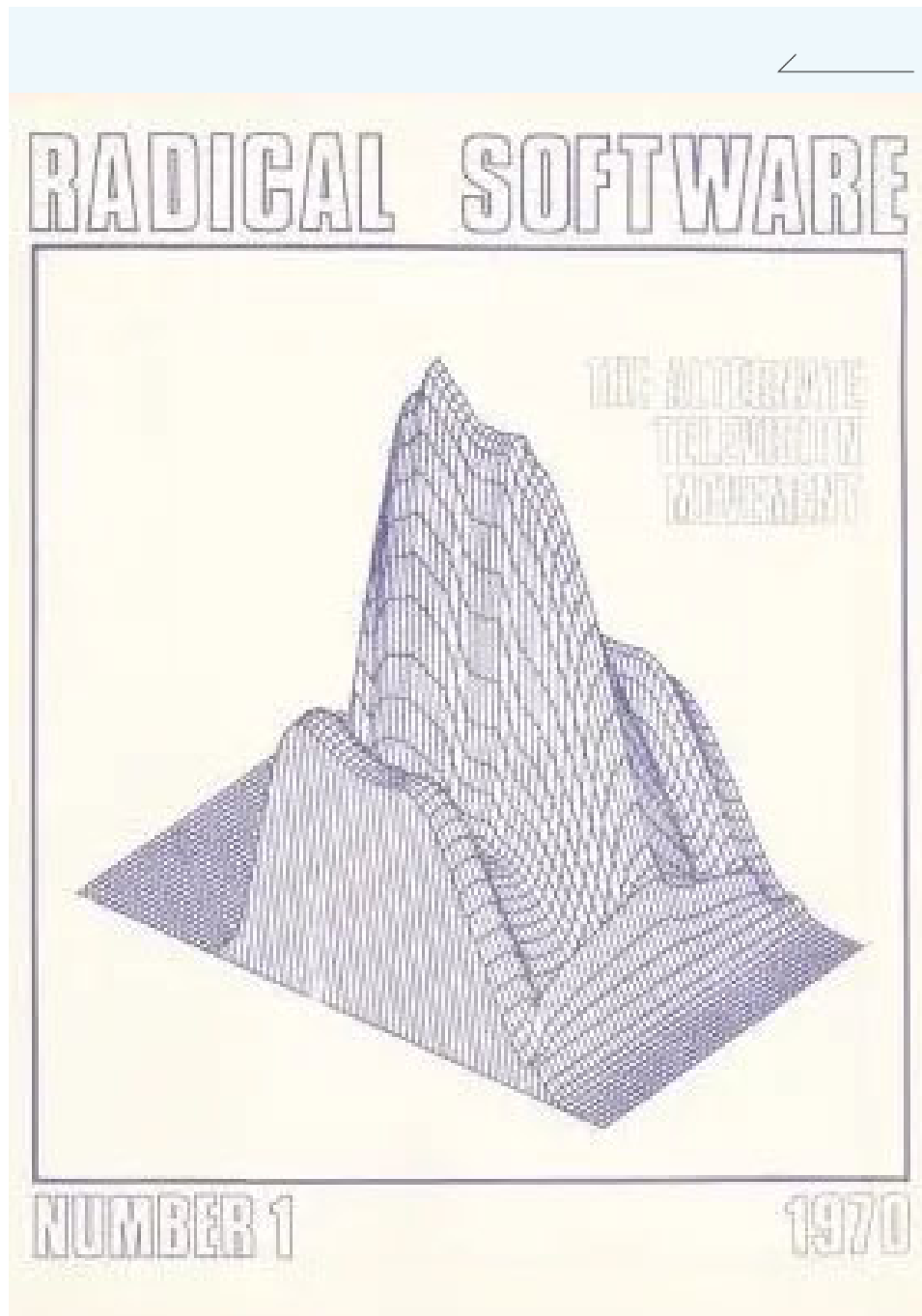
Radical Software, Volume I,
Number 1 The Alternate Television Movement
Spring 1970

In the first issue, they profoundly explained that the measure of power is no longer limited to land, labor or capital, but depends on the way of obtaining and disseminating information. If human beings want to survive in an era of rapid technological development, they can neither blindly reject technology nor accept it unconditionally. Instead, they should strive to humanize technology and enable people to master the information tools they need to shape and regain control of their own lives.
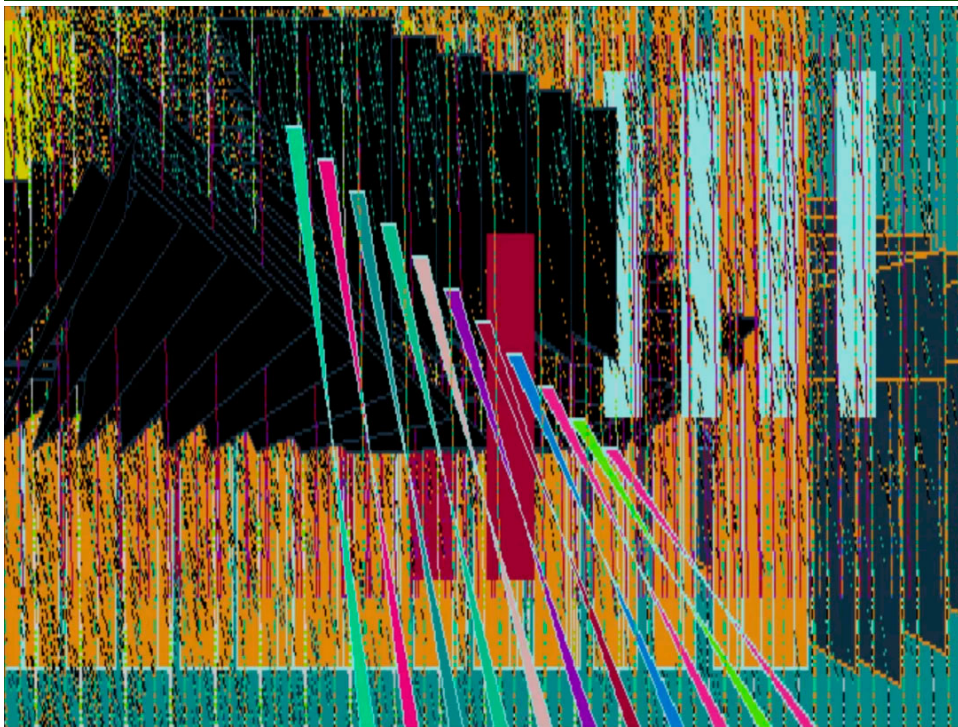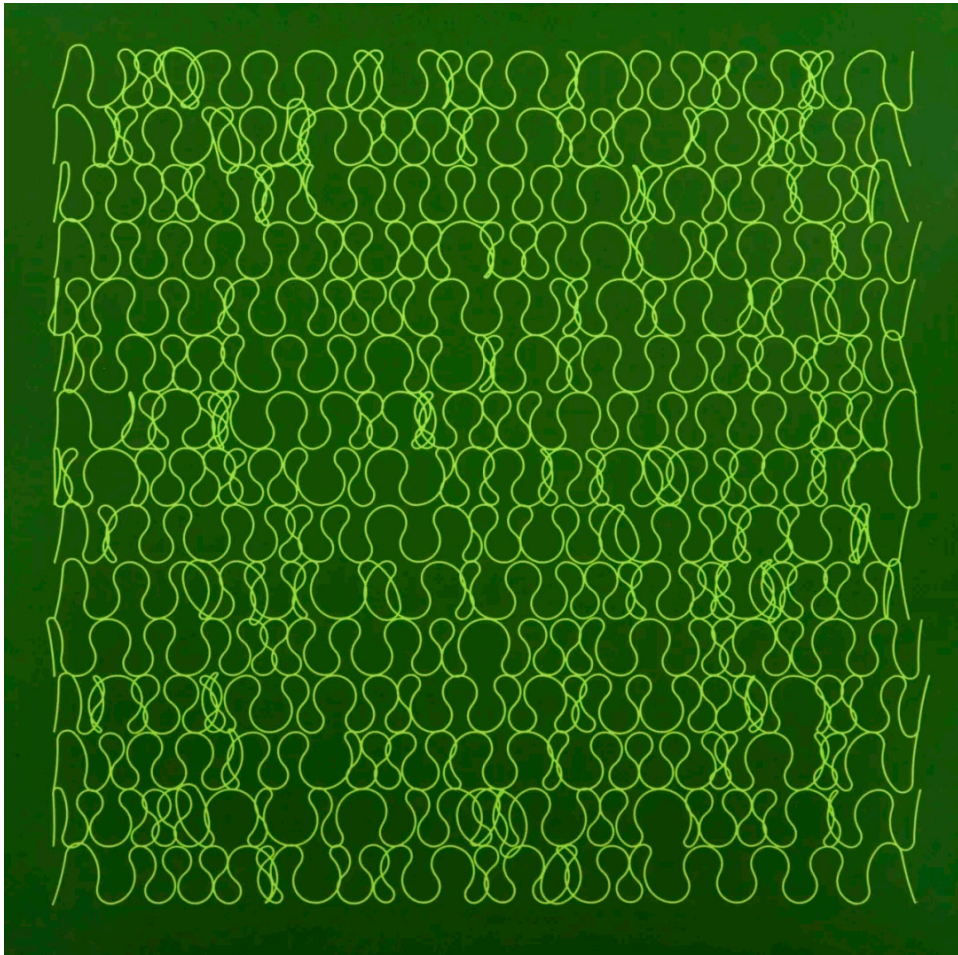
Sylvia Roubaud,
Connection of points by arc sequences,
1972, silkscreen on paper, courtesy of the artist
Photo: Franz Kimmel | ADAGP, Paris, 2024

The exhibition "Radical Software" is not only a review of this period of history, but also a look into the future. It calls on us to re-examine the history of digital art, especially the important role played by women in the field of combining technology and art.

Female artists participating in the exhibition
Photo: Vere van Gool
© Mudam Luxembourg

Lillian F. Schwartz Bell Laboratories, Murray Hill, New Jersey,
© 2024 Henry Ford 1974

It is worth mentioning that MUDAM is located at the intersection of the old and new districts of Luxembourg. Looking out from the building designed by I.M. Pei, one side is a brand new modern building, and on the other side is the ancient castle wall that has stood for hundreds of years.
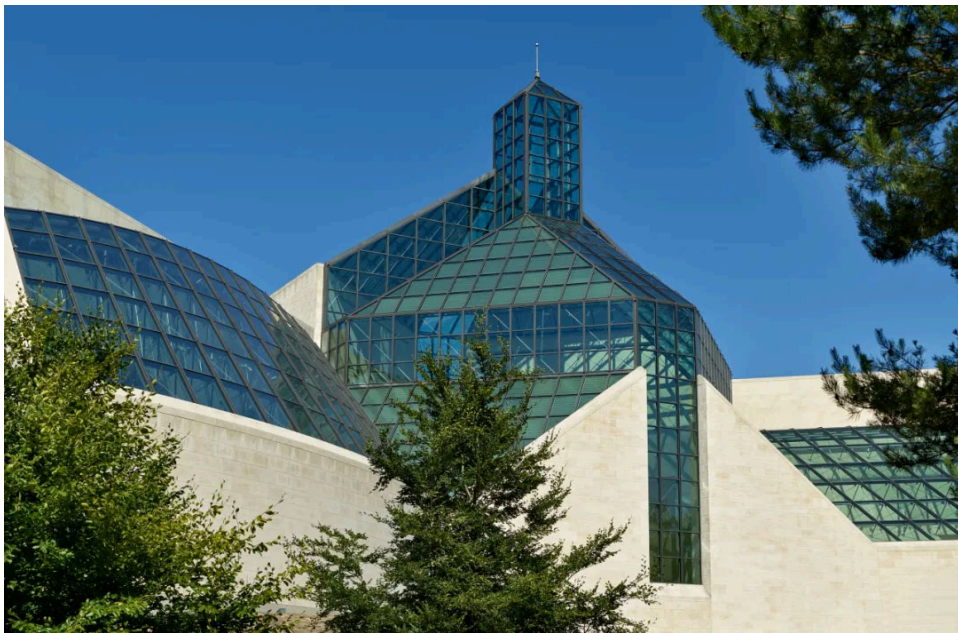
Mudam Luxembourg – Grand Duke of Luxembourg Museum of Modern Art
Duc Jean | I.M. Pei Architects
©Photo: Rémi Villaggi
Metz | Mudam Luxembourg
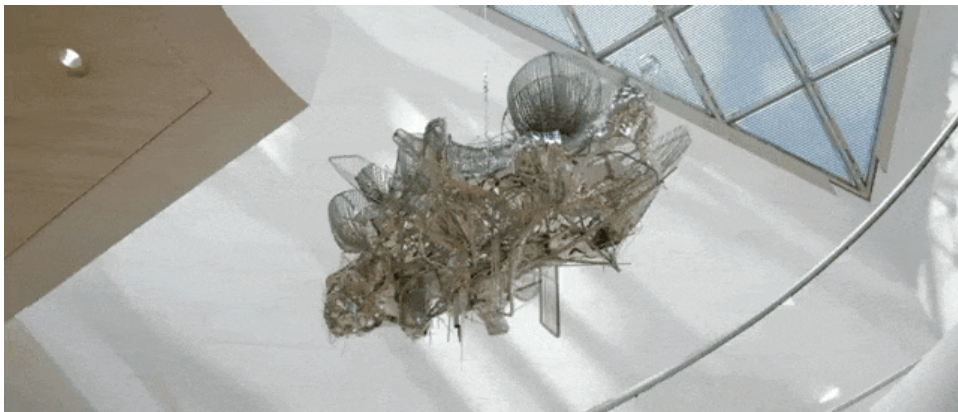
Grand Duke Museum of Modern Art, Luxembourg ©MUDAM Luxembourg

This geographical location makes the "Radical Software" exhibition even more meaningful.

Without the voices and contributions of Lovelace and the women participating in the exhibition, today's rapidly developing science and technology may present a completely different face. Their efforts and wisdom have not only shaped the history of science and technology art in the past, but also pointed out the humanistic direction of future technological development.

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和他们推动的事业

29.10.24, 10:34

Never absent! Women and digital art since 1961

Art Scene 28

Art Scene · Catalog

Previous

Sun Xun's animal circus is home to absurd and tiny people

Next

Between masks and makeup, who are we?