TOWARDS AN AUTOMATED ART?

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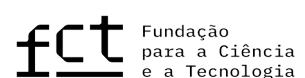LEARNING MACHINES, HUMAN CREATIVITY AND UNCERTAINTY

Rodrigo Gomes, Deep White for black, 2016

TOWARDS AN AUTOMATED ART?

LEARNING MACHINES, HUMAN CREATIVITY AND UNCERTAINTY

International Conference, Lisbon, 24 May, 2024

Universidade NOVA de Lisboa
Colégio Almada Negreiros
Campus Campolide

INSTITUTO DE HISTÓRIA DA ARTE · NOVA FCSH FACULDADE DE CIÊNCIAS SOCIAIS E HUMANAS UNIVERSIDADE NOVA DE LISBOA · IN2PAST PATRIMÓNIO | ARTE | SUSTENTABILIDADE | TERRITÓRIO · fCt Fundação para a Ciência e a Tecnologia

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TOWARDS AN AUTOMATED ART? LEARNING MACHINES, HUMAN CREATIVITY AND UNCERTAINTY

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Cultural production is becoming progressively controlled by machine-made calculations. Computational tools in the form of algorithms and AI seem to be getting closer to the loop of producing, distributing, selling and validating artworks in a completely digital context. It is possible to predict that, in the near future, they will be able to make their own decisions and produce new creative forms without direct human hand intervention. The arrival of an entire synthetic creative system is drawing nigh.

While images abound and never-ending streams of data are becoming unachievable for humans, the need for reflection is more urgent than ever. The predominant discourse has naturalised technology as neutral and unstoppable, favourable to all. Nevertheless, art might feature there not as a blind ally of technology, but as a necessary counterpart, a means of reflecting on the need and direction of its benefits through its use.

The widespread use of software tools and apps makes us dependent on our trust in technology while interacting with the real physical world. The search engines guide us in our navigation of the Internet, its platforms and databases, making things visible in the virtual digital world. How are they programmed? By whom? To see what?

Are we finally entering a new art ecosystem where artists are as replaceable as images? Are we becoming immersed in a new mechanized and financialised art system where artworks can be rapidly produced, consumed and wasted? Can human creativity survive in this context? Can machines really learn how to make art?

Luis D. Rivero-Moreno and Helena Barranha - Conference Chairs

Luis D. Rivero-Moreno, PhD in Art History (University of Granada, 2013) and Associate Professor at the University of León, Spain. He has worked in various areas of art and culture, mainly as a lecturer and researcher. His research relates contemporary art to different aspects of society: new technologies, digital culture, creative industries, heritage preservation, innovation and museums. Between 2022 and 2024 he is developing the NEWER project, *New Media Art in Portugal*, as a visiting researcher at Universidade NOVA de Lisboa with the support of NextGeneration EU European funds.

Helena Barranha is a Professor at Instituto Superior Técnico, Universidade de Lisboa, and a Researcher at the Institute of Art History, School of Social Sciences and Humanities, Universidade NOVA de Lisboa, where she is a member of the Museum Studies Group and coordinates the Cluster on Art, Museums and Digital Cultures. She has a Master's Degree in the Management of Cultural Heritage (University of Algarve, 2001) and a PhD in Architecture (University of Porto, 2008). She was the Director of the National Museum of Contemporary Art – Museu do Chiado, in Lisbon (2009-2012). Her current research focuses on cultural heritage, the architecture of contemporary art museums and digital cultures and she has published widely on these topics, both in Portugal and abroad. In 2021, she co-edited the book *Art, Museums and Digital Cultures – Rethinking Change.*

Rodrigo Gomes, Deep White for black, 2016

FRIDAY, 24 MAY, 2024

9:00 Registration

9:30- 10:45 **Opening Session**
Room 219
Moderators: Luis D. Rivero-Moreno and Helena Barranha

Keynote Lecture: "Do Machines Deep Dream of Automated Artists?"
Andrés Burbano

10:45 - 11:15 – Coffee break

11:15 - 13:00 Session 1:
Questioning the Nature of Art in the Age of AI
Room 219
Moderator: Joana Simões Henriques

"AI Art and the Productive Potential of Opacity"
Jasmin Pfefferkorn

"Emergence of Human-Machine Co-creativity? Shifting from 'AI Art' Towards Issues in AI Aesthetics"
Alexander Matthias Gerner

"Quantum Perspectives in Art and New Media: Towards Temporal Difference"
Yana Naidenov

"Latent Space: How Far is Far Away?"
Rodrigo Gomes

13:00 - 14:30 Lunch break *

14:30 - 16:00 Parallel Sessions 2a and 2b

Session 2a
History and Archaeology of New Media Art
Moderator: Margarida Brito Alves
Room 219

"Automation in Visual Arts (around 1960): Some Dilemmas with a Special View to Control"
Michael Rottmann

"From BBSes to DAOs - What Can We Learn from Early 1990s Digital Utopianism for Artist Organizations Today?"
Anna-Lisa Scherfose

"The Venice Biennale 2022 and the Let's get Digital Exhibition in Florence. The New Paradigms and Challenges of Digital Art. Will We Be Able to Tell the Right Story?"
Filomena Serra

"Making up for Lost Ground and the Exhibition Net Art in the Bermuda Triangle… at CAAA in Guimarães"
Sofia Ponte and Maria Luís Neiva

16:00 - 16:30 Coffee break

16:30 - 18:00 Parallel Sessions 3a and 3b

Session 3a
Automated Creativity and AI Aesthetics
Room 219
Moderator: Sofia Ponte

"The Aura in Contemporaneity: Destruction or Evolution?"
Rita Cêpa

"Technologisation of Art or Artisation of Technology? – Discussing AI Art in the Museal Context"
Franziska Garms

"Generative AI and the Fear of Images — Looking for Clues about the Future of Artificial Intelligence in Iconophobic Reactions to Lithography and Desktop Publishing"
Mário Moura

"Family Portrait[s]: 'Wreading' the Island through António Aragão"
Diogo Marques and Inês Cardoso

18:00 - 18:15 **Closing Remarks**
Room 219

Session 2b
Artistic Research, Copyright and Preservation
Moderator: Maria Teresa Cruz
Room SE1

"Creativity and Copyright in a World of AI-Generated Images"
Adelaide Rossi

"Future Us: Speculative (Re)positionings Regarding AI Literacy in Artistic Training and Research"
Margarida Alves, Henrique Cabrita and Helena Elias

"Dialogues on the Preventive Conservation of the artwork _DATA|ergo sum|RELOADED by Ana Marcos"
Irene Vivas Márquez and Keitty de Oliveira Silva

"Documenting Creative Processes in Generative Art. An Approach through Dario Lanza's Work"
Esther Moñivas Mayor and Darío Lanza Vidal

Session 3b
Extended Reality and Posthuman Spaces
Room SE1
Moderator: Carlos Pimenta

"CTRL+Z : On Language, Meaning and Generative Algorithms in Architectural Design"
Nathalie Kerschen

"Refiguring the Game Engine as a Speculative Tool: Exploring More-than-human Narratives in Volumetric Spaces"
Teodora Sinziana Alata

"Supertopia: Viscous Realities and Material Reconfigurations"
Ana Teresa Vicente and Nikolas Gomes

"Dancing in Virtual Reality Exploring the Interplay of Material and Virtual Bodies"
Rui Filipe Antunes, Cecília de Lima and Sílvia Pinto Coelho

SATURDAY, 25 MAY, 2024

10:00 - 11:30 Visit to the Museum of Art, Architecture and Technology (maat)
"Technology – Fuel to Art", with Joana Simões Henriques and Susana Anágua

Meeting point: entrance of the main gallery: https://maat.pt/en/planear-visita

This guided tour is included in the registration fee.

* Coffee breaks are included in the registration fee. Lunch is at the expense of each participant.
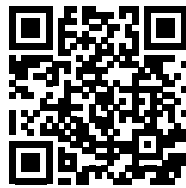
Rodrigo Gomes, Deep White for black, 2016

OPENING SESSION | KEYNOTE LECTURE

Moderators:
Luis D. Rivero-Moreno and Helena Barranha

DO MACHINES DEEP DREAM OF AUTOMATED ARTISTS?
Andrés Burbano

Art provides a unique platform for delving into the realm of Artificial Intelligence (AI), offering diverse perspectives on cognition, perception, creativity and consciousness. Rather than examining the influence of AI on art, our focus will critically explore the significant contributions made by art to contemporary conceptions and practices related to AI. This presentation will unfold across three key areas. Firstly, we will dive into the historical significance of generative art within the broader landscape of media arts. Secondly, we will examine how advancements in hardware technologies, driven by challenges posed by the media arts, within realms such as video games, have facilitated the expansion of generative AI. Lastly, we will explore how the arts' emphasis on diversity and uniqueness guides us in uncovering a more comprehensive narrative on the global development and impact of AI, with particular attention to examples from Latin America and Oceania.

Andrés Burbano is Professor in the Arts and Humanities School at the Open University of Catalunya, UOC (Barcelona, Spain), and Visiting Lecturer at Donau-Universität (Krems, Austria). He holds a Ph.D. in Media Arts and Technology from the University of California at Santa Barbara (California, USA) and has developed part of his academic career in the School of Architecture and Design at Universidad de los Andes (Bogotá, Colombia). Burbano works as a researcher, curator and interdisciplinary artist. His research projects focus on media history and media archaeology in Latin America and the Global South, 3D modeling of archaeological sites and also on the historical and cultural impact of computational technologies. Burbano has been appointed as ACM SIGGRAPH 2024 Chair and is the author of the book *Different Engines: Media technologies from Latin America* published by Routledge in 2023.

SESSION 1: QUESTIONING THE NATURE OF ART IN THE AGE OF AI
Moderator: Joana Simões Henriques

AI ART AND THE PRODUCTIVE POTENTIAL OF OPACITY
Jasmin Pfefferkorn

Opaqueness has long been mobilised within art as a way of creating the space for imaginative projections – negotiating and expanding our perceptions of visibility and invisibility, the knowable and the unknowable. The component of machine automation in art practice adds an additional layer of opacity to this history, beyond the work as an output. An artwork that utilises latent space embeds opaqueness at the level of process. This presentation develops a counter-narrative to transparent AI, by locating the emergence of three key themes from within contemporary artistic practices, which speak to the productive potential and critical value of opaqueness. These are: (1) opacity as holding political value for reclaiming cultural rights through techno-heritage, (2) opacity as an aesthetic frame to account for more-than-human knowledge and (3) opacity as a 'cognitive value', or creative affordance for imagination.

Jasmin Pfefferkorn is a Melbourne Postdoctoral Research Fellow in the School of Culture and Communication at The University of Melbourne. She is the lead investigator on the project 'The Impact of Generative Technologies on Museum Practice' (2024-2027) and the author of *Museums as Assemblage* (Routledge, 2023). Jasmin is the co-founder and director of the research group Coded Aesthetics and is on the steering committee for the Centre for Artificial Intelligence and Digital Ethics' Art, AI and Digital Ethics research collective. Her research spans museum and cultural studies, critical AI, aesthetics, visual culture, and digital humanities.

EMERGENCE OF HUMAN-MACHINE CO-CREATIVITY? SHIFTING FROM 'AI ART' TOWARDS ISSUES IN AI AESTHETICS
Alexander Matthias Gerner

We are currently in an era where we dream of creative machines, but this does not necessarily mean that we are dealing with the future of art. Jon McCormack and other authors explore the intersection of creativity, technology and art in their paper titled "Is Writing Prompts Really Making Art?". They discuss how generative machine learning systems can create complex imagery, videos and 3D datasets using text prompts. However, the main question is whether textual prompts can fully capture the richness and nuance of artistic intent.

Alexander Matthias Gerner, PhD in History and Philosophy of Science from the University of Lisbon. After being Assistant Researcher and Research Group Leader at CFCUL - Centre for Philosophy of Science of the University of Lisbon, since December 2023 he is an Assistant Professor and a Researcher at CICANT - Centre for Research in Applied Communication, Culture and New Technologies, Universidade Lusófona, Lisbon. His main research field is Philosophy of Media Arts and Technology, in particular AI aesthetics and art(f)actors, i.e., artefacts that mimic to be actors, such as AI avatars. In 2023 he co-edited a *Semeiosis* special issue on AI aesthetics.

QUANTUM PERSPECTIVES IN ART AND NEW MEDIA: TOWARDS TEMPORAL DIFFERENCE
Yana Naidenov

Quantum sciences and the development of quantum technologies are enabling new forms of artistic production and positioning, despite the chasms traditionally posed between scientific and humanistic fields. This paper examines artistic renderings exploring quantum computing as a methodology in creative practice, critically analysing the artists' conceptual involvement with quantum physics and non-linear temporalities, through a reading of posthuman new materialist theory and its commentary on historical discontinuity and temporal difference. The article offers a comparative study of the work of Libby Heaney and the surrealist Francis Picabia, their use of superposition of images and the re-absorption of art historical references into their pictorial narratives. The works offer visual reflections on the potential of historical multiplicity and anachronism, emerging from an implicit history of mediation (photography and film), despite almost 100 years setting them apart.

Yana Naidenov is a visual artist, and a PhD candidate in Art and Mediations at the Faculty of Social Sciences and Humanities, NOVA University of Lisbon. Her research interests include posthuman feminism and new materialism, animism in Southeast Asian Cinema, pluralistic conceptions of the body, hauntology, quantum physics, speculative fiction and counter-chronological narratives as disruptive devices to art-historical canons.

LATENT SPACE: HOW FAR IS FAR AWAY?
Rodrigo Gomes

In the realm of computational photography, images transcend their mere visual representation. They are the outcome of a latent space where artificial memories dissolve into what we define as representation. This space challenges our traditional conceptions of time and reality, artist and creation, human and non-human. Under the title "Latent Space: How Far is Far Away?", this presentation delves into the frontiers of visual perception and their implications for a reality shaped by the interaction between man and machine.

Rodrigo Gomes is a Luso-Brazilian artist. He lives and works in Lisbon. Through sculpture and the use of new media, his artistic work focuses on how contemporary techniques and hypermedia technologies filter reality and influence socio-economic aspects globally. He has exhibited in various countries, including China, Serbia, Greece, Italy, the USA, Poland, France and Portugal.
In 2021, he won the D-Normal / V-Essay Floating Points Prize in Hong Kong (China), in 2020, the Black Raven Prize (Portugal) and, in 2017, the Sonae Media Art Prize (Portugal).

SESSION 2A: HISTORY AND ARCHAEOLOGY OF NEW MEDIA ART
Moderator: Margarida Brito Alves

AUTOMATION IN VISUAL ARTS (AROUND 1960): SOME DILEMMAS WITH A SPECIAL VIEW TO CONTROL
Michael Rottmann

My art historical and theoretical contribution is dedicated to the subject of automation in cultural production, using the example of visual arts around 1960 and its historical context of computerisation, cybernetics, Cold War and the discourse of creativity. It will be shown that automation was realised not just with (digital) technical media like in Computer Art, but also in non-digital artistic forms, such as Serial and Conceptual Art, with alternative 'machines' which reconfigured aesthetic categories, as well as the notions of 'authorship' and 'decision making'. Finally, I will discuss some general considerations on automation within the visual arts and dilemmas like the artist's self-substituting and the difficulty of giving off control. The talk aims to provide a better understanding of 'Automated Art' and the nature of automation, also addressing what we can learn about it via the arts.

Michael Rottmann is an art historian and a media scientist and currently a lecturer at Kunstakademie Düsseldorf, Germany. His research focuses on the history and theory of art and (digital) media in the twentieth and twenty-first century. After professional training in IT and some programming experience, he studied visual arts/art history and mathematics in Stuttgart and Vienna. His doctoral thesis (book Gestaltete Mathematik), submitted at Freie Universität Berlin, explores the roles of mathematics in visual arts in New York around 1960. He has curated exhibitions at mumok Vienna and TU Vienna. As a senior researcher he led the SNSF research project Automated Innovations at the Academy of Art and Design in Basel and, recently, a Postdoc at Karlsruhe Institute of Technology. His work has been supported by the Klocker Foundation, DAAD, DFG, the Swiss Government and the SNSF. He has held teaching appointments in Basel, Berlin, Graz, Linz, Ludwigsburg, Vienna and Düsseldorf. Further information at: michaelrottmann.org.

FROM BBSES TO DAOS - WHAT CAN WE LEARN FROM EARLY 1990S DIGITAL UTOPIANISM FOR ARTIST ORGANISATIONS TODAY?
Anna-Lisa Scherfose

This talk focusses two types of virtual artist organisations which rely on forms of technological automation: Bullet Board Systems (BBSes) and Decentralised Autonomous Organisations (DAOs). By taking a look at one example of a contemporary artist DAO but, more particularly, by drawing a connection to a specific Bullet Board System (BBS) designed by artists in the early 1990s, it is examined if the utopian approaches of pre World-Wide-Web pioneers can provide models for contemporary artists' initiatives today. Despite the very different technologies that the artists use to build their own organisations, some parallels can be spotted in their motivations and the ways in which technological systems determine and guide the nature of their artistic collaboration.

Anna-Lisa Scherfose is a research associate in the Department of Art History and Aesthetics at the Kunsthochschule Kassel, where she researches on artist organisations in the 1990s and early 2000s which operated on the Internet. She previously graduated in Curatorial Studies (M.A.) from the Goethe University and Städelschule in Frankfurt a.M.. A selection of exhibitions and projects includes: *BPA// Exhibition 2022*, KW Institute for Contemporary Art, Berlin (2022); *Where Dreams Come True, Artist Dinner with Ernie Wang*, Villa Minimo, Kunstverein Hannover (2022); *Adam Shiu-Yang Shaw: Neither Parts, nor Spares,* BPA// Raum, Berlin (2022), *Arthut Stachurski: Side Chair, Artist's Table, #4* Oval Box, fffriedrich, Frankfurt (2021), *BPA at Gropius Studios*, Gropius Bau, Berlin (2020) and the lecture AI and Art Market, Hochschule für Gestaltung Offenbach (2019). Since 2017, she works with the artist mentoring programme BPA// Berlin programme for artists of which, since 2020, she is Managing Director.

THE VENICE BIENNALE 2022 AND *THE LET'S GET DIGITAL* EXHIBITION IN FLORENCE. THE NEW PARADIGMS AND CHALLENGES OF DIGITAL ART. WILL WE BE ABLE TO TELL THE RIGHT STORY?
Filomena Serra

With different objectives, dimensions and strategies, in which the problem of the digital arises in different intensities, we present the case of two different exhibitions that took place in 2022 in Italy: the Venice Biennale and *Let's Get Digital*, at Palazzo Strozzi, in Florence. Both presented the new frontiers between real and digital, where the public was invited to travel through installations and multimedia experiences created by artists investigating the world of crypto art, based on NFT. Trying to analytically bring together these exhibitions we propose to discuss and reflect on the new roles of art and the artists, as well as the new challenges that they face with the new directions of digital arts in the contemporary world, in which digitisation advances inexorably with a new lexicon of themes and problems.

Filomena Serra holds a PhD in Contemporary Art History from the Faculty of Social and Human Sciences at Universidade NOVA de Lisboa, where she is a researcher at the Institute of Contemporary History. She is also a member of the Cultural Studies National Network (RNEC). Her research interests and publications focus on Portuguese Modernism, visual culture, contemporary art and cultural and photography propaganda in authoritarian states. In 2016 she co-curated the contemporary art exhibition *(Co)Habitar*, at Casa da América Latina-UCCLA and, in 2019, the exhibition *Fotografia Impressa e Propaganda Visual em Portugal* (1934-1974) at the Portuguese National Library, in Lisbon. She co-edited the book *Projectos editoriais e propaganda. Imagens e Contra-Imagens no Estado Novo* (2020) and coordinated the bilingual edition of *Printed Photography and Propaganda in Portugal in the Estado Novo* (2021). She was Principal Investigator of the FCT project Printed Photography. Image and propaganda in Portugal (1934-1974) (PTDC/CPC- HAT/4533/2014).

MAKING UP FOR LOST GROUND AND THE EXHIBITION NET ART IN THE BERMUDA TRIANGLE… AT CAAA IN GUIMARÃES
Sofia Ponte and Maria Luís Neiva

This presentation addresses the forthcoming exhibition Net Art in the Bermuda Triangle: contributions for reflecting about art and the internet in Portugal at CAAA - Centre for Art and Architecture Affairs in Guimarães, Portugal, curated by Sofia Ponte and Maria Luís Neiva. Considering the lack of systematised knowledge about Net Art in the country, this exhibition brings together documentation and web-based artworks that shed light on some of the initial Internet related artistic and techno cultural initiatives that helped to shape the current computational mindset of Portuguese society. The exhibition aims to provide a deeper understanding of the specificities of Net Art in Portugal, while putting in place display strategies that reflect about the possibilities of historicisation of digital artworks, and of their original contexts, on the verge of disappearance.

Sofia Ponte is an artist and curator, as well as an assistant professor at IADE – Universidade Europeia, in Lisbon, and researcher at UNIDCOM/IADE. She obtained her Ph.D. in Art and Design at the University of Porto and her MA in Visual Studies at MIT, USA. Her main interests include Art & Design, Art & Technology, Women in the Fine Arts and the aftermath of these topics in exhibitions, collections and museums of art. She has published, lectured and presented her work in various international contexts. More information at: www.sofiaponte.net

Maria Luís Neiva is an architect, curator and co-head of the artistic direction of CAAA – Centre for Art nd Architecture Affairs, in Guimarães, Portugal, which she also co-founded in 2010. She obtained her architecture degree at Escola Superior Artística do Porto, and her MA on Art Studies – Museology and Curatorship at the Faculty of Fine Arts of the University of Porto. Her main research interests include cultural astronomy, astrology and Archaeoastronomy. More information at: https://www.centroaaa.org/index.php/quem-somos

SESSION 2B: ARTISTIC RESEARCH, COPYRIGHT AND PRESERVATION
Moderator: Maria Teresa Cruz

CREATIVITY AND COPYRIGHT IN A WORLD OF AI-GENERATED IMAGES
Adelaide Rossi

The advent of image generative Artificial Intelligence (AI) is challenging traditional conceptions of creativity and the associated protections, raising several questions that are currently difficult to answer unambiguously. How should the use of potentially copyrighted images in training generative AI models be managed? Are images generated through the use of these tools copyrightable, and if so, how? This presentation aims to explore the primary copyright issues related to images created with the assistance of generative AI, and to suggest potential solutions. The discussion will address the topic from the perspective of both the input (i.e., the data used to train the AI model) and the output (i.e., the image generated by the AI).

Adelaide Rossi is an independent researcher passionate about art and technology, as well as innovation in all its forms. She is a qualified legal professional in Italy and she holds a Master's degree in International Business Law from King's College, London. With expertise in private law, data protection and emerging technologies, she currently works as in-house legal counsel in Bologna, Italy.

FUTURE US: SPECULATIVE (RE)POSITIONINGS REGARDING AI LITERACY IN ARTISTIC TRAINING AND RESEARCH
Margarida Alves, Henrique Cabrita and Helena Elias

In this presentation, we will focus on the technological advancements of AI in the context of arts training in Higher Education and Research, namely on the literacy of new technologies that interlace with AI and on how AI can be used as a creative support and pedagogical tool to enhance teaching and learning in artistic disciplines. Equally important is the need for the foundational establishment of ethical guidelines in art research and training within academia, therefore contributing to the advancement of such practices in the digital age, and to a culture of ethical awareness and responsible art research.

Margarida Alves is an artist. She obtained her Ph.D. in Fine Arts (FBAUL, 2021), holds a Master's Degree in Glass Art and Science (FCTUNL & FBAUL, 2015) and Degrees in Sculpture (FBAUL, 2012) and Civil Engineering (FCTUNL, 2005). She currently serves as a junior researcher at CIEBA research centre, Faculty of Fine Arts, University of Lisbon.

Henrique Cabrita is a structural engineer with an MSc in Civil Engineering (FCT-UNL, 2006) and post-graduate studies in Digital Transformation (ISEG, 2021) and Applied AI and ML (ISEG, 2024). He currently works at PERI SE as a product manager of automated planning digital tools for the construction of temporary structures.

Helena Elias is an artist, professor and researcher at FBAUL. She was a post-doctoral research FCT grant holder in Sculpture at FBAUL. She has a PhD in Public Art (Faculty of Fine Arts, University of Barcelona), a Master's in Arts degree (Grays School of Arts, Robert Gordon University) and a bachelor-hon in Sculpture (FBAUL). She is the PI of the EMERGING project and Regional Coordinator of CAPHE project.

DIALOGUES ON THE PREVENTIVE CONSERVATION OF THE ARTWORK _DATA | ERGO SUM | RELOADED BY ANA MARCOS
Irene Vivas Márquez and Keitty de Oliveira Silva

Media Art represents a challenge for its conservation due to the technical variability and diversity of tangible and intangible elements in its construction. Moreover, it has complex relationships with time and space. Activated through interactivity, its aura only exists in the here and now, which makes it difficult to safeguard within museum institutions. To maintain its authenticity, it is necessary to collect information and documentation to safeguard its long-term integrity. This project aimed to document the creative process followed by the Spanish artist Ana Marcos in the creation of the interactive installation _DATA|ergo sum|RELOADED (2018), as well as the technical aspects of the piece, based on artificial intelligence. The artwork presents a great complexity, with elements such as a Kinect V2 sensor, which is beginning to suffer from problems of technological obsolescence. This project will be the basis for responding to the specific conservation issues posed by _DATA|ergo sum|RELOADED.

Irene Vivas Márquez graduated in Conservation and Restoration of Cultural Heritage from the ESCRBC (Escuela Superior de Conservación y Restauración de Bienes Culturales, Madrid, Spain). She is currently an Art History student at UNED - Universidad Nacional de Educación a Distancia, Spain, and a Master's student in Conservation of Cultural Heritage at the Faculty of Fine Arts, Complutense University of Madrid. She is interested in AI regarding creative processes and cultural heritage.

Keitty de Oliveira Silva graduated in History from the Universidade Federal do Paraná (Brazil) and has a post-graduate degree in Museography and Cultural Heritage from Claretiano University Centre (Brazil). She is currently a Master's student in the Management and Enhancement of Historical and Cultural Heritage at the University of Évora (Portugal) and an Erasmus student at the Complutense University, in Madrid. Her research interests include digital heritage and the digital transformation of museums.

DOCUMENTING CREATIVE PROCESSES IN GENERATIVE ART. AN APPROACH THROUGH DARIO LANZA'S WORK
Esther Moñivas Mayor and Dario Lanza Vidal

This proposal explores the importance of exchanging knowledge between conservators and artists, documenting together the creative processes inherent in generative art as a necessary means to understand, preserve and perpetuate these artistic practices. Since generative pieces often exhibit a degree of unpredictability and adaptability, documenting the creative process offers a more precise perspective on the interplay between intentionality and emergent phenomena. Given the fact that the algorithms serve as the underlying mechanisms driving the creative process, dictating from visual aesthetics to behavioural patterns, to document their writing process and evolution along with their parameters and variables can provide valuable insight into the artist's intentions and thought processes, thus enriching the understanding of the artwork's conceptual underpinnings. Documenting the procedural aspects of generative art not only ensures the authenticity of the works, which should always be a main issue in media art conservation, but also facilitate knowledge exchange and collaboration, ultimately advancing the field of generative art as a whole.

Esther Moñivas Mayor is a professor in the Department of Painting and Conservation-Restoration in Complutense University of Madrid. She has a PhD in Art History, Postgraduate studies in Aesthetics and Art Theory, a Degree in Art History and a Bachelor of Arts Degree in Conservation and Restoration of Cultural Heritage. Her research deals with the relationship between art, science and technology. She analyses the operative-imaginative dimension of new media and materials, and documents current artistic practices using transdisciplinary methodologies. She develops theoretical-practical research from the perspectives of New Materialisms and Critical Heritage Studies. She has participated in seven long-term research projects and, since 2020, she is Principal Investigator of the teaching innovation group "Between Artists and Restorers. New Formats of Interaction and Knowledge Exchange".

Dario Lanza Vidal has a PhD in Information and Communication Technology, studies in Computer Science and Programming at the Massachusetts Institute of Technology (MIT), Postgraduate studies in Computer Graphics, a Master's degree in Digital Modelling and Rendering, and a D.I. degree in Engineering. After graduating in engineering, he started a career in visual arts as commercial designer for high-end advertising agencies and magazines such as *BBDO*, *Leo Burnett* or *El Mundo* magazine, winning several awards and recognitions as a visual artist. He is currently a Fine Arts university professor and author of several papers about the role of computers in the production of contemporary art today. His artworks have been exhibited in galleries across the world including New York, Los Angeles, Hong Kong, London, Athens and Cardiff. Lanza is interested in the way digital technology is altering the production of art today, as well as its potential to define our aesthetic experience and give shape to our digital culture.

SESSION 3A: AUTOMATED CREATIVITY AND AI AESTHETICS
Moderator: Sofia Ponte

THE AURA IN CONTEMPORANEITY: DESTRUCTION OR EVOLUTION?
Rita Cêpa

In one of his most iconic texts, Walter Benjamin (1892-1940) recounts the evolution of artistic creation, emphasizing the loss of aura due to the massification caused by the use of mechanised tools. However, these not only qualitatively alter the artwork, impacting its singularity and authenticity, but also enhance its exposure and, above all, emancipate it.

Today, new forms of creation, consumption and circulation are questioning the original concept. But will it be able to resist? Can the aura overcome the challenges posed by the AI era? Can it coexist with generative art? How will it witness the collapse of distances, the increasing automation of creative practices and the virtualisation of cultural institutions? Will it succumb to the obliteration of materiality?

This paper seeks to outline the path taken by this notion, while critically reflecting on the changes it has undergone, considering its meaning and possible adaptation to a constantly evolving world.

Rita Cêpa is currently pursuing a PhD in Contemporary Art History (NOVA FCSH) and a Postgraduate Programme in Heritage, Management and Participation (NOVA FCSH). She has a Degree and a Master's in Painting (FBAUL) and two Postgraduate degrees: Art Curatorship (NOVA FCSH) and Photography & New Media (IADE). She also completed a short course on Inclusive Museological Practices (ICOM) and an Executive Programme in Management and Museology (Católica University / APOM). She's a member of CIEBA and IHA-NOVA FCSH, as well as of the General Directorate of Arts Group of Consultants and Experts - within the scope of the Arts Support Programme of the Portuguese Ministry of Culture - and the Board of Curators of UmbigoLAB. Previously, she founded VENI VIDI, a digital archive of exhibitions, and worked at Joana Vasconcelos Studio and maat – Museum of Art, Architecture and Technology, in Lisbon. She was also a Research Fellow (Rossio/NOVA FCSH, FCG). Recently, she has developed several curatorial projects around Lisbon.

TECHNOLOGISATION OF ART OR ARTISATION OF TECHNOLOGY? – DISCUSSING AI ART IN THE MUSEAL CONTEXT
Franziska Garms

The AI and art discourse is often about the technologies' impact on creative practices – embedded in prevalent AI narratives, somewhere between human empowerment and replacement. But what about art? This research identifies potential roles of art and reveals possible dimensions of a shifting art paradigm. The core of the research were discussions about perceptions of AI through the "artistic lens" of three AI-supported, interactive media art installations in a technology-ethics museum in Germany. Ethnographic methods allowed the immersion into the fieldsite and to capture different viewpoints of visitors, employees, and experts. Through lived aesthetic episodes and embodied knowledge generation, the artworks function as catalysts for discourse on technology-society relations, and critical reflections. In the given context, the installations are perceived as technology showcases, and not interpreted as artworks. This leads to misunderstandings and blurred boundaries between the constructs of art and technology but opens opportunities for the thinking of art.

Franziska Garms is a scientific assistant at the Centre for the Green and Digital Transformation in Cities and Communities, Aarhus University, Denmark, working to support scientific advisory and coordination in EU-level projects and conducting research in media and journalism studies. She holds an M.Sc. in Economics and Business Administration with a specialisation in Market Anthropology from the University of Southern Denmark (SDU). The key to her studies is seeing the consumer as a human being, mainly from a sociological and a cultural perspective, and considering the role of companies in the whole of policy, society and environment. She was enrolled in Below Zero, the SDU Talent Programme for Green Entrepreneurship. She gained industry experience in business development, innovation management and marketing in start-ups and mid-sized companies in the energy, ICT and food sectors. For undergraduate education, she studied at Technische Universität Dresden, Germany, in the programme of B.Sc. Transportation Economics.

GENERATIVE AI AND THE FEAR OF IMAGES — LOOKING FOR CLUES ABOUT THE FUTURE OF ARTIFICIAL INTELLIGENCE IN ICONOPHOBIC REACTIONS TO LITHOGRAPHY AND DESKTOP PUBLISHING
Mário Moura

Platforms such as Midjourney AI, Dall-e or Stable Diffusion generate images from prompts, fuelling fears that machines will replace art creators. We argue that these image-making technologies are received similarly to images and that visceral reactions to AI resemble historical reactions of iconophobia and iconoclasm. We examine possible historical precedents for these responses to AI, namely technologies such as lithography, photocomposition and desktop publishing. These blurred the formal boundaries between text and image, generating iconophobic reactions that sought to restore the traditional hierarchy that places the former above the latter. By contextualising AI within this historical framework, we predict that, despite the initial resistance, generative AI will probably become a mainstream tool in design, after being subjected to new aesthetic hierarchies and ethical standards.

Mário Moura is a design, art and culture critic and curator based in Porto. A teacher and researcher, he writes regularly for newspapers and magazines. He authored the books *Design em Tempos de Crise* (Braço de Ferro, 2009), *O Design que o Design Não Vê* (Orfeu Negro, 2017), *A Força da Forma* (Orfeu Negro, 2019) and *Páginas Inquietas. Sobre documentos Insubmissos* (Dois Dias, 2019). He teaches History and Criticism of Design and Editorial Design at the Faculty of Fine Arts of the University of Porto. He is a member of the Institute of Research in Art, Design and Society (i2ADS).

FAMILY PORTRAIT[S]: 'WREADING' THE ISLAND THROUGH ANTÓNIO ARAGÃO
Diogo Marques and Inês Cardoso

Family Portrait[s]: a virtual photo-novella (2024) is a cyberliterary installation by wr3ad1ng d1g1t5 collective, employing AI-based apps, augmented reality (AR) and combinatory literature techniques to depict fictional portrayals and biographies of a Funchal-based family from the early twentieth century. Supported by the Funchal City Council's Artistic Creation Grant (2023-2024), the project unfolds in three stages: (1) Researching with data, (2) Experimenting with data and (3) Creating with data. Drawing inspiration from Antonio Aragão's experimental ethnoliterary work together with the concepts of insularity, heritage and portraiture, Family Portrait[s] challenges conventional boundaries of authorship and interpretation, intersecting technology, local community engagement and artistic expression. In our presentation, we will delve into the project's foundational elements, namely its literary, social and technological dimensions, while also exploring wr3ad1ng d1g1t5's broader investigation on language as art through digital media.

Diogo Marques is a researcher in Digital Humanities at CODA - Centre for Digital Culture and Innovation, University of Porto. In 2018, he received his Ph.D. in Materialities of Literature (University of Coimbra). He was a postdoctoral researcher at IELT – Instituto de Estudos de Literatura e Tradição (NOVA FCSH), within the scope of the VAST Project: Values Across Space and Time (2020-2021). In 2020, he co-organised a volume of essays titled *Investigação-Experimentação-Criação: em Arte-Ciência-Tecnologia* (Porto: FFP Press). He is an author, curator and translator of experimental (cyber)literature and co-founding member of wr3ad1ng d1g1t5 collective. He is a member of ILCML - Margarida Losa Institute for Comparative Literature (FLUP - Faculty of Arts and Humanities, University of Porto).

Inês Cardoso is a Ph.D. candidate in Literary, Cultural and Interart Studies at the Faculty of Arts and Humanities of the University of Porto. She received a Master's degree in Literary, Cultural and Interarts Studies (Comparative Studies and Intercultural Relations) from the same institution, presenting a dissertation dedicated to the poetic and performative production of Alberto Pimenta (2016). Currently, she is completing her doctoral thesis on the articulation between resistance, politics and intermediality in the works of Salette Tavares and António Aragão, a project for which she was awarded a doctoral scholarship from the Portuguese Foundation for Science and Technology (FCT). She is a researcher at the Margarida Losa Institute for Comparative Literature (ILCML) and a founding editor of *SKHEMA: Interarts Magazine* (www.skhemagazine.com). With Bruno Ministro and Lúcia Evangelista, she recently co-edited the book *Performances Poéticas | Poéticas Performativas* (2024).

SESSION 3B: EXTENDED REALITY AND POSTHUMAN SPACES
Moderator: Carlos Pimenta

CTRL+Z : ON LANGUAGE, MEANING AND GENERATIVE ALGORITHMS IN ARCHITECTURAL DESIGN
Nathalie Kerschen

This paper discusses the differences between form-finding algorithms (parametricism) and artificial intelligence systems (GANs/ diffusion models) in architectural computational design. Examining the "outputs" of these tools and techniques by focusing on architectural design language variations, I contextualise them with architects' early 1960/70s experiments with artificial intelligence and cybernetics. The Architecture Machine's "soft machines" are examples of designers' early attempts at creating a "man-machine dialogue" using images and texts. Drawing on the hermeneutical-phenomenological tradition in architectural theory, this paper questions the conflation of the design process with a set of written instructions, turning to the enactive and phenomenological accounts of language, instead. The paper's goal is not to devalue generative algorithms' usefulness, considering more conventional tools and techniques of architectural representation. Rather, it is to juxtapose the "command and control" of prompts with the concept of language as an embodied, embedded and situated relation to the world, one which is an equal, not to say primary, driver of meaningful design.

Nathalie Kerschen holds a Master's degree from the École Nationale Supérieure d'Architecture Paris-Malaquais (2010) and a Bachelor's degree in philosophy from Paris-Sorbonne IV (2014). In 2022, she defended her doctoral thesis, Reclaiming Nature in Computational Architectural Design: From Biology to Phenomenology, at McGill University, in Montreal. Her speculative design projects and conceptual art projects were exhibited in contemporary art centres, such as the Casino – Forum d'Art Contemporain in Luxembourg and the iMal — Art Centre for Digital Cultures & Technology in Brussels. After teaching theoretical and practical courses at Concordia University's department of Design and Computation Arts in Montreal, Nathalie became a research fellow at Rome's Academia Belgica for her research-creation project "Urbs Animalis" (2023). As a researcher, she has received several grants, including the AFR grant from the Luxembourg National Research Fund. Nathalie's peer-reviewed articles have been published by Netzwerk Architekturwissenschaften and the University Press of TU Berlin as well as Springer Nature.

REFIGURING THE GAME ENGINE AS A SPECULATIVE TOOL: EXPLORING MORE-THAN-HUMAN NARRATIVES IN VOLUMETRIC SPACES
Teodora Sinziana Alata

From high fidelity volumetric worlds to digital twins and impossible physics, game engine technologies are increasingly employed within the production of contemporary visual culture. Simulations have been steadily evolving in terms of their visual accuracy and technical complexity, resulting in expansive and high-fidelity volumetric renders being adopted across a wide range of creative disciplines, resulting in an ever-increasing accumulation of computer-engineered artefacts. The game engine therefore situates itself as an emergent infrastructure producing new algorithmic visualities, thereby giving rise to a machinic 'engine' aesthetic that, this paper contends, prefaces much more than the visual: featuring interactive, immersive and intelligent agencies, these computational worlds not only produce an aesthetic of volumes, but also give rise to relational frameworks that structure experiential economies. Situating coded interactions as utterances rather than mere automated processes, this presentation seeks to reflect on the poetic, relational and agential possibilities of the networks that inhabit such algorithmic infrastructures.

Teodora Sinziana Alata is a computational artist, researcher and writer based in London, UK. She is a Lecturer in Computational Media Practices at the University of Westminster and a doctoral researcher at the Centre for the Study of the Networked Image at London South Bank University, where her current research focuses on computer-mediated imaginaries, game engine technologies and immersive storytelling. More broadly, her research is concerned with algorithmic cultures, new economies of volumetric and synthetic media, alternative forms of AI and the novel formats of networked experiences enabled by computational systems.

SUPERTOPIA: VISCOUS REALITIES AND MATERIAL RECONFIGURATIONS
Ana Teresa Vicente and Nikolas Gomes

We will analyse Supertopia within media archaeology and interdisciplinary scope, focusing on the research developed in Brussels (iMAL, Bozar) and Cairo (Cairo Goethe-Institut Kairo, AUC - American University of Cairo and Cairotronica). Supertopia employs maps to depict movement, highlighting electromagnetic forces in technology and their ecological impact. The first iteration repurposed cassette tapes into ferrofluid to reflect on human displacement using Mercator's world-map projection. The second stage used commercial ferrofluid to examine extractive practices in Egypt, over an old map of the country. The device repurposed REAPER music software and Raspberry Pi 4 to control electromagnets behind the map. This setup allows a customisation of ferrofluid trajectories, illustrating the incessant nature of resource extraction. The piece challenges traditional views of matter as inert by showcasing the viscous physicality of ferrofluid. The chemical solution developed with the support of AUC facilitates its movement inside a glass container. Ultimately, Supertopia prompts a reflection on the environmental impact of technology and the interconnectedness of media and Earth history.

Ana Teresa Vicente is an artist and researcher based in Lisbon, Portugal. She holds a PhD in Photography from the Faculty of Fine Arts at the University of Lisbon, with a fellowship from Portuguese Foundation for Science and Technology (FCT). She has presented her work regularly, through exhibitions, lectures and publications. In her work, she is keen on exploring different mediums, using an interdisciplinary research practice as a creative method, both with optical and non-optical technologies. Currently, she is a lecturer at ESAD.CR (Caldas da Rainha, Portugal) and a researcher at CIEBA (FBAUL), Portugal.

Nikolas Gomes is a Brazilian sound artist and musician currently based in Lisbon with a Masters in Production and Technologies of Sound at Universidade Lusófona de Humanidades e Tecnologias. His work deals mostly with the intersection of musical production and sound art, looking to push the boundaries between these two fields. As a self-taught programmer and DIY enthusiast, he focuses his research on the development of interactive audiovisual devices that can present new ways of interacting with sonic materials.

DANCING IN VIRTUAL REALITY EXPLORING THE INTERPLAY OF MATERIAL AND VIRTUAL BODIES
Rui Filipe Antunes, Cecília de Lima and Sílvia Pinto Coelho

This presentation delves into the GhostDance research project, which studies how dancers perceive embodiment when interacting with a virtual body. It explores shifts in sensorimotor perception, awareness of the kinesphere, tactile experience and perception of weight and effort when the material body engages with an immaterial entity. The project includes a live performance where dancers alternate between real and virtual partners, creating a phantasmagorical dialogue between human and virtual bodies. We will present the work-in-progress and discuss its visualisation components, discussing a reactive audiovisual environment developed using machine learning. The environment adapts to the dancer's movements, transforming shapes, dimensions and colours based on Laban Movement Analysis.

Rui Filipe Antunes is an integrated researcher at CICANT, Universidade Lusófona, in Lisbon and he collaborates with INET-md at NOVA FCSH. With a doctorate in Computational Arts and Technologies from Goldsmiths, University of London, he was a Marie Sklodowska-Curie Fellow at MIRALab, University of Geneva and BioISI, University of Lisbon. Earlier, he pursued Sculpture and Visual Arts courses at Ar.Co. His research work explores human body representations through algorithmic processes, investigating dance movement in interaction with virtual reality. He was PI of the *Ghostdance* project (EXPL/ART-PER/1238/2021).

Cecília de Lima is a Professor at the Escola Superior de Dança, in Lisbon. Since 1999 she developed her work as a dancer and choreographer, collaborating with several artists across Europe. She earned her PhD in 2017. Her research work explores dance ties to phenomenology, cognitive sciences and digital technologies. Between 2016 and 2023, Cecília was a Professor at the Dance Bachelor and Doctoral Programmes at the University of Lisbon.

Sílvia Pinto Coelho is a researcher at ICNOVA-FCSH and choreographer. She has a PhD and a Master's Degree in Communication Sciences, a degree in Anthropology and a Bachelor's Degree in Dance. She has been presenting her choreographic work since 1996 and has participated in research processes, pedagogy and films with collaborators from various fields. At ICNOVA, she is a member of the Performance and Cognition group. She has been the director of the online magazine Interact since 2019.

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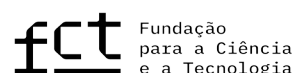
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