

Towards the CYENS ArtTech Archive: Affordances and Opportunities of a R&I Institution as an Art, Science & Technology Stakeholder

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Abstract

Amongst the thematic schemes of the CYENS CoE is the fostering of art, science and technology (AST) synergies, and the development of infrastructures and archival practices to support the great volume of data under the cultural and creative sectors, powered by emerging technologies like Virtual, Augmented, and Extended Reality (VR, AR, XR). While this scheme is still in its genesis, it poses a distinct opportunity to establish an in-house and country-wide digital archive of New Media Art (NMA) that develops simultaneously with the artworks and AST projects it hosts.

This paper delves into the key considerations that are necessary to effectively collect, preserve, and provide access to NMA in a way that meets the needs of various stakeholders such as artists, scientists, and cultural producers. It also provides a methodological outline that incorporates state-of-the-art approaches in line with the ISEA Summits for New Media Art Archiving aims of archival connectivity; additionally, it employs the affordances of emerging technologies from parallel archival projects of the centre. By combining these affordances into an agile strategy, a reflexive archive can be developed from the growing database of CYENS' AST related activities that will serve both as a preservation tool and an active repository for artists and scientists. This archive could additionally assist the contributors to further develop and disseminate their artworks and practices, across cultural, scientific and industry circles. The goal of the proposed archive would be to become a local and regional documentation hub of NMA, preserving it for the future and making it accessible to an international network of institutions and archives.

Keywords

Art, science & technology; new media art; archiving; preservation; documentation; artist-centered digital archiving; archive as a multidimensional resource; local digital archive; Cyprus.

Introduction

Evolving from the electronic and digital technologies that have shaped the contemporary world, New Media Art

(NMA) utilises and discusses technological developments, along with the societal shifts and plausible futures they constantly suggest. The conditions that arise from the diverse (im)materialities and dependencies of this genre, which includes artworks that utilise electronic, digital, web and virtual technologies [1,2], challenge the canons of established preservation methodologies, as well as the efficacy of traditional archival practises [3]. The urgent need for preservation and effective documentation strategies is well acknowledged; intense efforts for addressing them have been in the workings for the past few years, many of which have been explored and developed through the ISEA Summit of New Media Art Archiving. Presently, the leading institutions in the field are pursuing much-needed policy, synergetic, and interdisciplinary transformations [4].

Considering these realities, a hyperlocal gaze in Cyprus reveals that there is a complete absence of any institutional or other structure dealing with the acquisition, documentation, or preservation of NMA related activities. Local and international artists are active in the Cypriot artistic scene, presenting a wide range of examples of media art practices. However, outside of periodical exhibitions and happenings displaying such artmaking, a limited number of new media artworks have been acquired or documented by any institutional structure able to contextualise, safeguard, or care for them, leaving the local NMA scene largely unexplored.

Amongst the few institutions that are currently focusing on new media related art practises in Cyprus is the CYENS Centre of Excellence. Even though CYENS is not a cultural or art institution but a research and innovation centre, it has been hosting art, science and technology (AST) residencies and projects, as well as projects developing infrastructures and archival practices to support the cultural and creative sectors. These activities have engaged not only media artists, artworks, and interdisciplinary art, science, and technology synergies, but also the building of technical and technological capacities related to digital archiving.

In the following section, the structure and practices of the Centre will be presented. We argue that through its institutional format, research and innovation dynamics and AST-oriented interests, the Centre is uniquely positioned to address the contextualisation of AST projects and eventually address the issue of NMA documentation for Cyprus. Taking equally in account the current synergetic and interoperability strategies that are developed by the key institutions

in the field, the inauguration of the CYENS ArtTech Archive can have a dual function: serve as the first local AST archive and contribute to the international efforts of effective documentation and dissemination of NMA.

The potential of a reflexive AST Archive situated in a Research and Innovation Institution

CYENS CoE focuses on interactive media, smart systems, and emerging technologies. The centre is a joint venture between the three public universities of Cyprus - University of Cyprus, Cyprus University of Technology, and Open University of Cyprus-, the Municipality of Nicosia, and two renowned international partners, the Max Planck Institute for Informatics, Germany, and, the University College London, United Kingdom. Disseminating knowledge and academic excellence, while supported from local and international institutions, and having the Nicosia Municipality as the key policy-maker partner, the centre acts as the catalyst between high caliber scientific and technological research, and the local communities and industry. While the centre is rather young, having opened its doors in 2018, the last two years have been pivotal in broadening its vision and strategizing in niche areas of interest.

A number of multidisciplinary groups, each focusing on specific topics, produce high quality research and applications. Amongst them, two research groups, the Museum Lab and Immersive Technologies for Intelligent and Creative Applications (ITICA) group, and the Thinker Maker Space (TMS) of the centre, have individually and collaboratively developed AST related projects and activities or have partnered in projects that focus on the development of infrastructures and archival practices to support the cultural and creative sectors, powered by emerging technologies.

One of the centre's strategic application areas is titled "Arts, Culture and Technology", via which the centre's state-of-the-art facilities and interdisciplinary expertise is employed, facilitating and promoting activities relevant to the cultural and creative sectors associated with research and technological development. CYENS aims to become a central art-science hub of arts, culture, science, and technology in the region and become influential in promoting socio-economic stability in the Eastern Mediterranean and Middle East (EMME) region.

In particular, the Thinker Maker Space (TMS) has been running an international artist residency program since 2021, having hosted up to now 11 interdisciplinary resident artists, experimenting on the intersections of AST; the relevant international open calls have received significant interest, collecting more than 300 applications during this short period. TMS also organized more than twenty talks, workshops, and screenings, as well as 7 individual exhibitions. Further, the TMS has consistently participated as a key partner in industry projects where design thinking and cutting-edge technology, implemented via digital fabrication and rapid prototyping, were key to project development and the realization of impactful results.

The Museum Lab has completed several research and applied projects, as well as publications related to: the future of technology in museums and heritage sites with special attention to the concepts of presence, embodiment and multi-sensory experiences; participatory and inclusive technologies; deep mapping; digital humanities; and arts and technology.

The ITICA research group has been contributing its expertise of virtual & augmented reality, machine learning and cognitive sciences in numerous projects. The group's special interest in arts & technology was first demonstrated through its participation in the 2020 Ars Electronica Festival, curating the WADS Garden Nicosia. Representing Cyprus in the STARTS – Repairing the Present consortium, as the first ever Cypriot Regional Centre, it hosted, together with the TMS, its first artist residency in 2022. Besides the close collaboration on projects with the TMS and the Museum Lab, ITICA has been involved in at least two major European projects working towards virtual, collaborative and interoperable museum databases, and digital archiving methodologies for art and other cultural artifacts.

The three groups co-organised the first Work in Progress (WIP) showcase in November 2021. This AST focused initiative brought together creatives and technologists – local and visiting – with the aim to initiate a dialogue between disciplines and establish future collaborations. In its second edition, in November 2022, WIP evolved into a festival, that developed under the title "Brave New Humanity". It hosted over 80 experiences, exhibiting media artworks, interactive performances, AST related research projects, talks, workshops, screenings, and interactive games from invited local and visiting artists, universities, organizations, and CYENS.

In the short period of two years during which this "Digital Creativity in Arts & Culture" direction was slowly adopted, the three groups have already engaged with a significant number of AST driven artists and organized art exhibitions, seminars, and workshops. In 2021, a PhD Fellowship was announced with an aim to examine archiving practices and their methodologies and design a pilot archive for CYENS. The successful candidate was the 1st author, and the ArtTech Archive project was thus born.

The ArtTech Archive is presently being conceptualized as part of an ongoing research project under the Digital Creativity in Arts & Culture strategic area of CYENS. This research aims to establish the basis for an open and reflexive archive of CYENS affiliated, current and upcoming AST projects. Currently, a participatory action research methodology is informing the overall theoretical approach. The design of thematical semi-structured interviews will help document the expertise and approaches of scholars and experienced practitioners of NMA archiving, while focus groups will document the perspectives of AST creators which have worked under the CYENS initiatives. The results and combined insights from established methodologies, the latest international developments and CYENS affiliated, in-the-wild art & technologies contributions aim to underpin the theoretical framework and standards of the ArtTech Archive.

Throughout this process, the ArtTech website will serve as a reinforcement tool, hosting the research's progress, including speculative versions of archival assets and possible interactions, and future planning. Furthermore, we expect that this process will assist in the initial identification of the technical requirements of such an archive, i.e., the different data models and representations required for storing the relationships between the archives.

While defining the objectives and functionalities of this archive, it's imperative to take into account the needs and challenges media artworks carry, consider the socioeconomic characteristics of the NMA/AST ecosystems and pay attention to the current efforts that are taking place on an international level to promote collaborative and interoperable archival systems. Bearing these in mind, an opportunity of contributing additional functionalities to the NMA developing archival practises and affordances arises.

Upon completion of this research, the technical requirements for the CYENS ArtTech Archive will be documented, serving as the foundation for its development. Once the technical requirements are established, the development of the first public CYENS ArtTech Archive will commence with the vision to enable scholars, researchers, artists, and the wider public to explore and engage with the rich history and diversity of media art, contributing to the continued growth and evolution of this field. However, it is important to mention that the process and methodology of creating this pilot archive is the most important outcome of the project.

Towards a reflexive and extrovert archive

As a database has been organically evolving within the AST activities of the center, the assets and processes that have and will continue to populate it, are collected simultaneously with the conceptualisation of the ArtTech archive. An agile strategy to transform this growing database into a reflexive archive, will need to fulfil the following three-fold criteria: i) for the archive to be employed as a preservation tool, ii) to serve as an active repository framework and iii) as a dissemination platform. To ground these intentions, the refinement and contextualisation of the already collected logs and data from the centre's AST activities between 2020-2022 will inform the developing theoretical research.

ArtTech as a preservation tool: Any archival process is inherently linked with artwork preservation processes; as Mordel argues, often, artists can complexly conceptualise the preservation needs that their artwork may entail, yet the role of a digital archivist in communicating the urgency of early-stage digital archiving remains essential [5]. Archival logs can be a holistic format of preservation for events, talks, seminars, research papers and presentations, yet they cannot hold the physical expressions of AST projects and artworks. Nevertheless, NMA/AST projects' longevity depends heavily on preserving their digital, source code and software

components, along with their creative, technical, and theoretical processes, which can be effectively preserved in an archival format. The nature of hosting such projects at CYENS, especially the artist residencies, is tightly bound with technically supporting and enabling the collaborating artists and scientists, with each creative process being substantially observed and recorded to the extent possible. This level of involvement in the production of the projects has enabled us to discuss, support and enable artists and scientists to develop best practises in documenting their artistic and technical methods and informing them of possible data preservation issues from the early creative stages. In certain instances, we have suggested pre-emptive actions to secure manageable and flexible versions of datasets and assets.

The majority of the artworks and projects currently populating the database have multiple components, contributors and theoretical bases, while their digital/technological components have varying degrees of visibility in the final artwork or display format. Currently, we use an internal Tech Rider and General Information template we have developed, informed by international protocols and methodologies [6,7], allowing us to have satisfactory logs and resources for the initial indexing. Additionally, we have openly available form¹ to collect basic information and intentions from artists, researchers, and other contributors. Nevertheless, these templates and forms need to be further enriched to collect more extensive information, details and assets to adhere under a complex, yet flexible indexing system. It is our goal to utilise this research's findings to optimise the relevant information collecting documents. Additionally, the various types of digital assets need to adhere to an allied indexing system and hosted on a common server or cloud storage facility.

The synchronous development of archive/archival subject aims to alleviate the burden of basic sanitization the database, as faced by numerous larger and older archives [8] and allow for the developing database to be cross-checked and be aligned with existing archives. Cross-checking data with other archives may be applied for basic information of each contributor (accurate names, biographies, affiliations, general artwork description etc.), as well as regarding the prevalent terminology and keywords used for contextualisation, whenever it is of course applicable and appropriate in the representation of the log/asset.

ArtTech as an active repository framework: Another functionality the ArtTech archive would perform is allowing the artists and scientists to maintain, evolve and make visible the most important iterations of their projects on the archive's framework. The centre's interest of applying academic research into broadly reaching innovative practises can be greatly explored through providing the artists and scientists niche technological support, utilisation new digital tools, as well as source asset repository functions for the backend datasets related to each project's iterations and

¹ The template documents that are openly available are the following: [TMS AiR Exhibition Information Form - bit.ly/3KZu6BZ](https://bit.ly/3KZu6BZ); [TMS Workshop Information Form - bit.ly/3kQBGEb](https://bit.ly/3kQBGEb); [TMS Talk](https://bit.ly/3JloznO)

[Information Form - bit.ly/3mnzu7w](https://bit.ly/3mnzu7w); [TMS Residency Application Form - bit.ly/3JloznO](https://bit.ly/3JloznO).

modifications. Such features can support the future development and dissemination of the artists' and scientists' practises across the artistic, scientific, and industrial spheres. Its educational and cultural contributions can similarly extend locally and internationally, to reach broader audiences, industries, and cultural scenes, acting as an educational, technology development and distribution resource, suggesting such practises as a direction to be adopted by other institutions and digital platforms.

ArtTech as a disseminating platform: A final but equally significant aspect of the ArtTech developing archival project is the operability and interface of the public resource system to be launched. Often, the cluttered, unclear, or even outdated visual identity of any website or online resource becomes a hurdle to its widespread adoption. For this archive to be accessible and diverse, it is essential to make its content and the semantic connections between the projects it hosts, the broader context themes and concepts, and eventually connected archives, readily accessible. This is directly connected with the indexing and contextualisation stages that were aforementioned. Nevertheless, translating it into an easy-to-navigate and inviting user experience will likely be the most difficult challenge.

Creators' roles and other institutional affordances

While the centre has maintained an ongoing dialogue with most artists and scientists that were hosted by the center's AST activities, we aim to secure a long-term communication strategy, to formally include the artists, scientists and other contributors in the formation of the archival structure, capabilities and propagation. Evolving from the informal discussions and exchange of ideas on the archive's structure, the artists and scientists will be approached through a focus group methodology, similar to expert group methodologies applied by other media art initiatives [9]. By developing an in-depth discussion and joined workplan, a new type of collaborative partnership beneficial for both artist and archiving institution can be fostered.

It is important to stress that beyond its technological capacities, CYENS has to offer expert theoretical resources and practises, which are accordingly contributing to the contextualisation of the AST included projects within the broader media art theory and history discourses. The structure and affordances of the archive will be equally evaluated and informed by the current art and media historic and archive research.

Concluding, through the ArtTech archive, there is the potential to formulate the first local contextualization of AST practices, establishing a basis that may eventually expand, inviting local institutions and museums, galleries, artist-led spaces, and individuals to thoroughly log their new media artworks, projects and related activities, constituting it as the much-needed archival resource representing the local NMA scene and developments. In order for this archive to reach its full potential, it would need a long-term viability scheme, beyond the confine of a PhD project, supported by governmental and European funds and the infrastructures of

CYENS. As CYENS has an institutional affiliation with the Nicosia Municipality and the three public universities, it has the means to address institutional responsibilities that concern not only excellent research on technology but also supporting and developing the creative sector. It also has the capacity to apply its expertise in securing relevant funding for the development of this reflexive archive and putting into practice already acquired expertise and resources. Finally, it can contribute from its genesis to the developing international interoperable archival structures proposed within ISEA Summits on New Media Art Archiving, becoming a valuable stakeholder in digitally powered and dependent cultural content.

The ArtTech Archive has the capability to serve as a hosting platform for artists, researchers, and scientist. It can become the digital platform where they will be able to host, update, preserve and disseminate their work. By activating transparent and inclusive processes, iterating archival subjects, and intuitive archival taxonomies and interfaces, it can become a truly interconnected hub for regional AST practices that will be developing synchronously with evolving technologies.

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Authors Biographies

Myrto Aristidou holds a bachelor’s degree in Fine Arts from the Athens School of Fine Arts (2009) and a master’s degree on Heritage and Interpretation, Department of Museum Studies of the University of Leicester, UK (2013). Her research interests include

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Theopisti Stylianou-Lambert is an artist/researcher. She is interested in the ontology and workings of everyday photography and archives, as well as the intersections of new technologies and photography. Theopisti is a member of the advising committee of the peer-reviewed journal “*photographies*”, the vice-chair of the “International Association of Photography and Theory”, a curator of the IAPT Photobook show (2016, 2018, 2021) and has received several international fellowships and awards. She has exhibited her work in a number of art exhibitions in Cyprus and abroad and she is passionate about photobooks. She is currently Associate Professor at the School of Fine and Applied Arts at the Cyprus University of Technology, and the group leader of *Museum Lab* at CYENS Centre of Excellence.

Kleanthis Neokleous graduated from the University of Cyprus in June 2011, with a Doctorate in Computer Science and has a multidisciplinary academic background in various fields including Virtual Reality and 3D graphics, Electronic Health (eHealth), Cognitive Psychology, Computational Neuroscience, Machine Learning and Space Science and Technology. He was involved with the conception, design, preparation, writing and coordination of many National and EU research projects. During and after his PhD, Dr. Neokleous co-founded in parallel two innovative startup companies in Virtual Reality technologies and eHealth applications in line with his academic and research interests. Since June 2019, he is the team leader of the Immersive Technologies for Intelligent and Creative Applications (ITICA) Multidisciplinary Research Group (MRG) of the first Research Centre in Cyprus focusing on Interactive media, Smart systems and Emerging technologies (CYENS).

Kyriaki Yiakoupi holds an MA in Conservation Studies (Historic Buildings) from the University of York, UK, 2011 and BA (Hons) in Interior Design from the University of Wolverhampton, UK, 2010. Kyriaki has participated in several international multidisciplinary projects with expeditions to develop her skills in the Conservation of Cultural Heritage. Kyriaki’s main scientific interests are related to the ethics and philosophy of conservation, the analysis and interpretation of the historic buildings, along with the introduction of many different techniques of 3D technological equipment in order to understand the static and pathological condition of the structure, the geometry, the style and preservation accuracy through 3D architectural modelling and Digital Cultural Heritage Technologies.