

Symposium REAACH 2024

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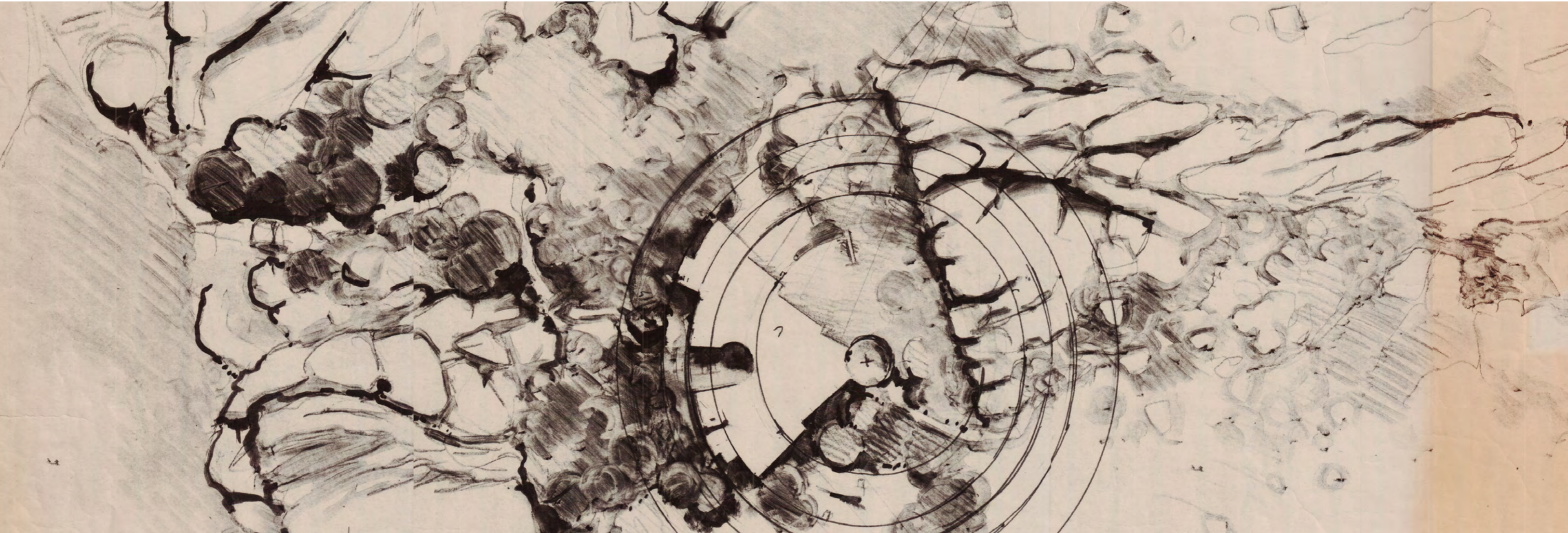


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REPRESENTATION INSIDE AND OUTSIDE THE LANDSCAPE

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Alberto Ponis, sketch for Casa Hartley, detail.

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diségno

5 *Francesca Fatta*

Editorial

7 *Maria Grazia Cianci*

Cover

Inside and Outside the Landscape. Representation as an Interpretative Tool for the Landscape

21 *Javier González-Campaña*
Noemie Lafaurie-Debany

Balmori Associates: Landscape Representation

31 *Darío Álvarez*

Representation and Design in Historic Gardens

44 *Alex Wall*

Image

The Pleasure of Architecture

45 *Elena Ippoliti*

The Pleasure of Architecture and the Tenderness of the Landscape

REPRESENTATION INSIDE AND OUTSIDE THE LANDSCAPE

Landscape Drawing and Cultural Heritage

53 *Mercedes Linares Gómez*
del Pulgar

Notes on the Representation of the Heritage Landscape

61 *Greta Attademo*
Alessandra Pagliano

Between Painted and Real Landscapes: Storymaps for the Storytelling of the Phlegraean Fields

73 *Carlos Rodríguez Fernández*
Flavia Zelli
Sagrario Fernández Raga

Between Geology and Architecture. The Representation of the Archaeological Landscape of Tiermes

87 *Andrea Pirinu*
Giancarlo Sanna

Knowledge, Representation and Communication of the Military Landscape of Sardinia During the Second World War

97 *Simone Barbi*

Towards the Regeneration of China's Rural Landscapes. Zhang Ke's Architectural Acupuncture in Tibet as a Case Study

107 *Linda Flaviani*

Roman Countryside between Reality and Imaginary: the Representation of a Stratified Landscape

Landscape Drawing between Tools and Methodologies

123 *Alberto Grijalba Bengoetxea*
Julio Grijalba Bengoetxea

On Architecture and Landscape. Some Fragmentary Representations

135 *Camilla Casonato*

Connecting Communities and Landscapes Across Europe. Digital Tools and Participatory Practices for Green Education

149 *Marta Rabazo Martín*

Shaping the Change: the Evolution of Landscape Representation and the Relationship between Man and Nature

161 *Francesca Paola Mondelli*

The Use of GIS in Landscape Planning. Cartographic Representations between Knowledge and Action

171 *Amedeo Ganciu*

Landscape Features in Italian-style Gardens: Machine Learning and Computer Vision for Symmetry Detection

Landscape Drawing between Imagination and Utopia

- 187 *Livio Sacchi* The Representation of Landscape through Drawings and Utopian Visions
- 195 *Gabriele Pierluisi* The Urban Landscape of the 'Fourth City'
- 209 *Fabio Colonnese* Architecture as Image of Landscape
- 223 *Fernando Linares* Distance in Art or the Art of Distance: the Illusory Search for Depth and its Treatment
Isaac Mendoza in the First Landscape Representations
- 237 *Fabrizio Agnello* Urban Landscape in Circular Images: Panoramas and Cylindrical Anamorphosis
Maria Isabella Grammauta

Landscape Drawing in Contemporary Design

- 253 *Lucina Caravaggi* Landscape Design as the Representation of Relationships with Nature, Ecologies and Other Living Species
- 267 *Sara Colaceci* Contemporary Representations for Landscape Design
- 279 *Ana Muñoz-López* Graphic Mimesis. Representation of the Landscape in Dimitris Pikionis' Xenia Hotel
Lara Redondo González and Alberto Ponis' Casa Hartley
- 291 *Laura María Lázaro San José* Representing the Invisible. The Integral Plan for the Architectural and Cultural Landscape of Maní, Yucatán

RUBRICS

Readings/Rereadings

- 307 *Rossella Salerno* A Reading of Alexander von Humboldt's *Kosmos* between Scientific Observation and Images of Nature

Events

- 313 *Alexandra Fusinetti* VL International Conference on Visualizing Landscape
- 316 *Gabriella Liva* 45th UID Conference
- 319 *Michela Meschini* *Lizori: Segni e Dialoghi*
Chiara Mommi
- 322 *Giuseppe Nicastrò* Digital & Documentation 2024. Otherness
- 325 *Roberta Spallone* Symposium REAACH 2024
- 328 *Ornella Zerlenga* UIDSS2024_UID_Summer School 2024, Drawing for the Gods: Selinunte, Temple F

- 333 **The UID Library**

- 337 **UID Awards 2024**

Events

Symposium REAACH 2024

Roberta Spallone

REAACH 2024 is the fifth edition of the *REAACH Symposium* (fig. 1), an event that, over the two days of study on October 8 and 9, 2024, featured contributions from international scholars on the topic of the challenges of the discipline of Representation in light of the disruptive and interconnected phenomena of Artificial Intelligence (AI) and eXtended Reality (XR).

The symposium, first held in 2020, was born online because of the pandemic, after some postponements in the hope of keeping it in-person. The organizational simplicity, the possibility of reaching scholars in every part of the world, the modularity of the program, and the cost containment have, over the years, consolidated this mode of holding, coordinated by the three Chairs, Andrea Giordano, Michele Russo, and Roberta Spallone, at the DICEA (Civil, Environmental and Architectural Engineering) of the University of Padua. Following a call for extended abstracts, the proposals are selected for oral or video presentation at the symposium. The next phase involves the development of the research according to the directions of the Scientific Committee, up to the production of an extended contribution that, if accepted by the reviewers, is collected as a chapter in a collective volume, published in the

'Digital Innovations in Architecture, Engineering and Construction series' of Springer Nature.

While the annual holding of the symposium imposes a tight cyclicity in its organization and subsequent publication is the outcome of the discussion and directions of the Scientific Committee, it has the advantage of reading and interpreting the trends imposed by technologies and the ability of scholars to govern them, establishing a stringent link between the proposals of previous years and the new ones.

The survey of keywords – AI and/or XR are mandatory to target contributions appropriately; others should be drawn from a 'galaxy' of terms conceptually related and referring to the different declinations of the discipline of Representation – and the comparison between them in the successive editions of the symposium, allow for the identification of established and new trends in the studies presented.

In the inaugural presentation of the *REAACH Symposium 2024*, a brief *excursus* was made between themes and directions of the different editions in light of the previous considerations.

The first *REAACH-ID Symposium 2020* aimed to carry out a recognition, a fundamental one, of the research carried out by Representation scholars

in Italy that explored new interests and intersections in the field of Artificial Intelligence and Augmented Reality (AR), outlining possible interdisciplinary collaborations and transdisciplinarity. The acronym *REAACH-ID*, conceived for the event, revealed the meaning of the initiative ('Representation for Enhancement and management through Augmented reality and Artificial intelligence: Cultural Heritage and Innovative Design').

The second step of the 2021 debate set the ambitious goal of exploring the new boundaries that, after just one year, AR and AI marked in Cultural Heritage and Innovative Design, opening up to international studies. That goal was achieved and surprisingly exceeded, thanks to the lymph provided by new proposals and scholars.

In the third *REAACH-ID Symposium* of 2022, it was observed that many of the topics addressed in the research corresponded to those listed in the Final Report 'Study on quality in 3D digitization of tangible cultural heritage: mapping parameters, formats, standards, benchmarks, methodologies, and guidelines', published in April 2022. In the last paragraph of the report devoted to 'Forecast Impact of Future Technological Advances', single points of attention in convergence

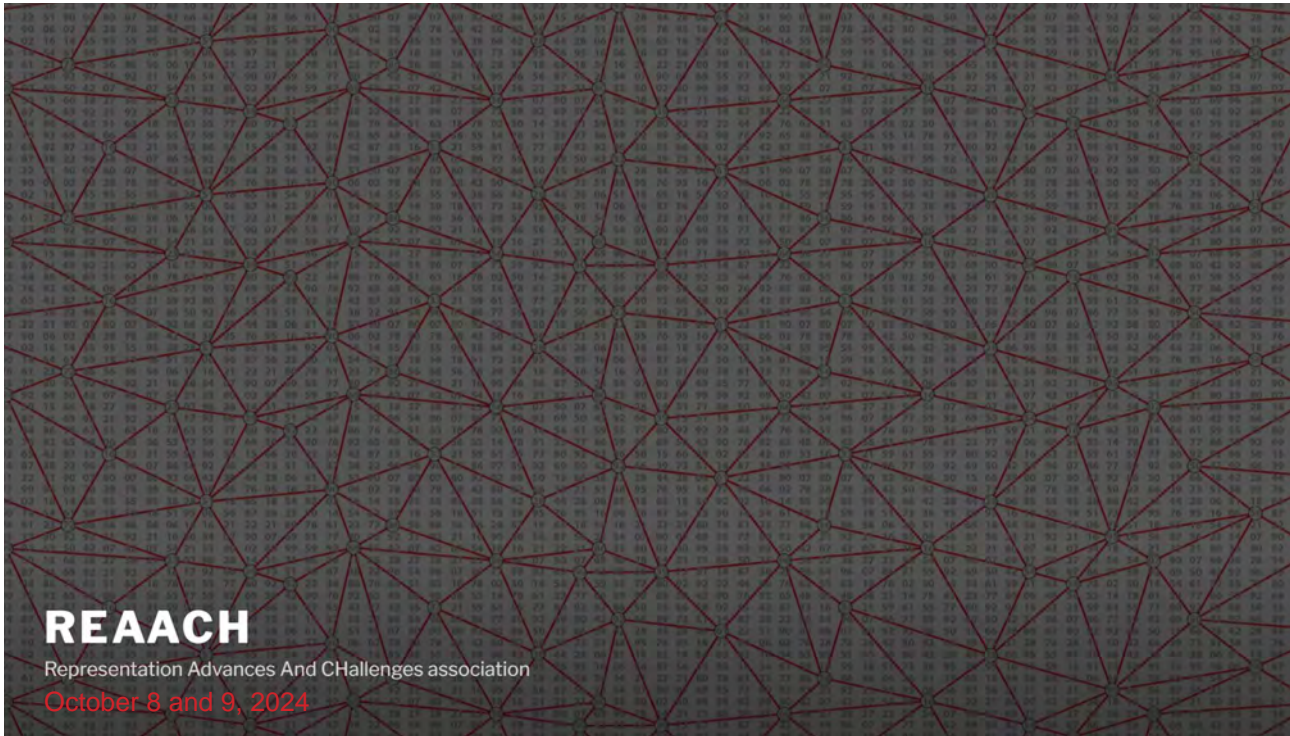


Fig. 1. Banner of the event.

with *REAACH-ID Symposium* topics were, among others, Extended Reality (AR, VR, MR), Metaverse, 5G, and the Continued Advancement of Mobile Technologies, BIM, HBIM, HHBIM, and the Digital Twin, Artificial Intelligence/Machine Learning, Blockchain Technologies. In some studies, it also opened the big game of Generative Artificial Intelligence.

In 2023, the Symposium reconfigured its title to *REAACH* (REpresentation Advances And CHallenges), taking over the name of the REAACH Social Promotion Association (<https://www.reaach.eu/>) which had just been

founded to direct its goals. The focus of the Symposium expanded to include the relationships of Representation with Artificial Intelligence and Extended Reality and a keywords scheme, the one discussed above, was structured to guide the construction of proposals. The rise of generative Artificial Intelligence was evident in both Cultural Heritage and Innovative Design.

The current *REAACH 2024* (<https://www.reaach.eu/symposium-2024/>) featured 63 selected contributions: 42 in oral form and 19 in video. In total, the contributions involved 194 scholars from five continents.

Two keynote lectures characterized the study days, broadening the perspectives of AI and XR. The first, given by Francesco Carota and Gustavo Garcia do Amaral, both professors at the School of Architecture and Design at the University of Kansas, was titled 'Revealing and Interpreting Complex Urban Patterns from Location Based Social Network Data. An Investigation into Chinese Stadiums in the Global South' the second, by Lauren S. Ferro, from CSIRO's Data61 research institute in Melbourne, 'XR's challenges and solutions for cybersecurity'.

Eventi

Symposium REAACH 2024

Roberta Spallone

REAACH 2024 è la quinta edizione di REAACH Symposium (fig. 1), evento che, nel corso di due giorni di studio, l'8 e il 9 ottobre 2024, ha visto i contributi di studiosi internazionali sul tema delle sfide della disciplina della Rappresentazione alla luce dei dirimpenti e interconnessi fenomeni dell'Intelligenza Artificiale (Artificial Intelligence, AI) e della Realtà Estesa (eXtended Reality, XR).

Il simposio, svoltosi per la prima volta nel 2020, nacque nel formato on-line a causa della pandemia, dopo alcuni posticipi decisi nella speranza di poterlo svolgere in presenza. La semplicità organizzativa, la possibilità di raggiungere studiosi in ogni parte del mondo, la modularità del programma, il contenimento dei costi, hanno negli anni consolidato tale modalità di svolgimento, coordinata dai tre Chairs, Andrea Giordano, Michele Russo e Roberta Spallone, presso il DICEA (Civil, Environmental and Architectural Engineering) dell'Università degli Studi di Padova. Le proposte, a seguito di una *call for extended abstract*, vengono selezionate per la presentazione orale o video in occasione del simposio. La fase successiva prevede lo sviluppo della ricerca secondo le indicazioni del Comitato Scientifico, fino alla produzione di un contributo esteso che, se accettato dai revisori, viene raccolto come capitolo di un volume collettaneo, pubblicato

nella collana *Digital Innovations in Architecture, Engineering and Construction* di Springer Nature.

Lo svolgimento annuale del simposio se, da un lato, impone una serrata ciclicità nell'organizzazione e nella successiva pubblicazione, esito come detto della discussione e delle indicazioni del Comitato Scientifico, dall'altra, ha il vantaggio di leggere e interpretare i trend imposti dalle tecnologie e la capacità di governarli da parte degli studiosi, stabilendo un legame stringente fra le proposte degli anni precedenti e quelle nuove.

Il censimento delle parole chiave – AI e/o XR sono obbligatorie per indirizzare correttamente i contributi, altre vanno attinte da una “galassia” di termini concettualmente connessi e riferiti alle differenti declinazioni della disciplina della Rappresentazione – e il confronto fra esse nelle successive edizioni del simposio, consentono di far emergere tendenze consolidate e nuove negli studi presentati.

Nella presentazione inaugurale di REAACH Symposium 2024, alla luce delle considerazioni precedenti, è stato svolto un breve excursus fra temi e indirizzi delle differenti edizioni.

Il primo REAACH-ID Symposium 2020 aveva mirato ad effettuare una ricognizione, fondamentale, delle ricerche svolte dagli studiosi della Rappresentazione

in Italia che esploravano nuovi interessi e intersezioni nell'ambito dell'Intelligenza Artificiale e della Realtà Aumentata (AR), delineando possibili collaborazioni interdisciplinari e transdisciplinari. L'acronimo REAACH-ID, ideato per l'evento, rivelava il significato dell'iniziativa (*Representation for Enhancement and management through Augmented reality and Artificial intelligence: Cultural Heritage and Innovative Design*).

Il secondo step del dibattito, quello del 2021, si pose l'obiettivo ambizioso di esplorare i nuovi confini che, dopo appena un anno, AR e AI segnavano negli ambiti del *Cultural Heritage* e dell'*Innovative Design*, aprendosi agli studi internazionali. Tale obiettivo, fu stato pienamente raggiunto e sorprendentemente superato, grazie alla linfa fornita da nuove proposte e nuovi studiosi.

Nel terzo REAACH-ID Symposium del 2022 si osservò che molti dei temi affrontati nelle ricerche, corrispondevano a quelli elencati nel *Final Report Study on quality in 3D digitisation of tangible cultural heritage: mapping parameters, formats, standards, benchmarks, methodologies, and guidelines*, pubblicato nell'aprile 2022. Nell'ultimo paragrafo del report dedicato al *Forecast Impact of Future Technological Advances* singoli punti di attenzione in convergenza con i topics di REAACH-ID Symposium erano, fra gli

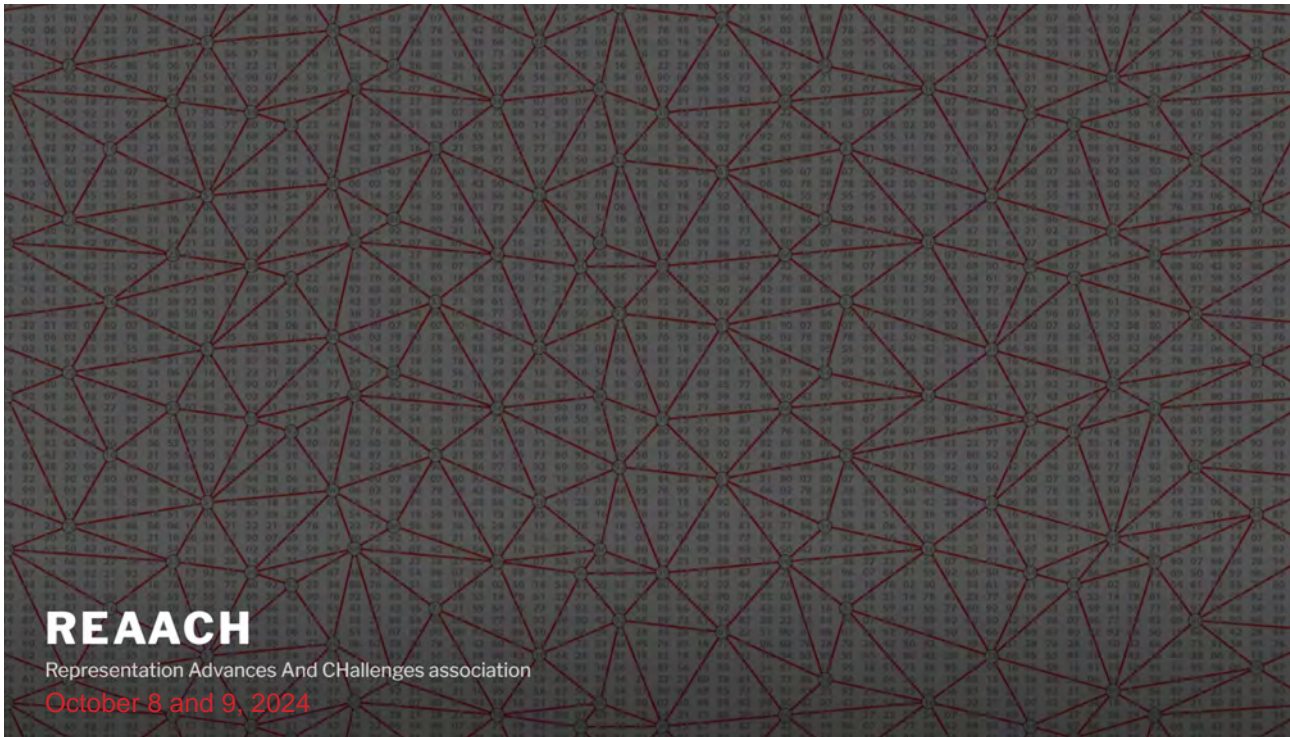


Fig. 1. Banner dell'evento.

altri, *Extended Reality* (AR, VR, MR), *Metaverse*, 5G and the *Continued Advancement of Mobile Technologies*, BIM, HBIM, HHBIM and the *Digital Twin*, *Artificial Intelligence/Machine Learning*, *Blockchain Technologies*. Si apriva, inoltre, in alcuni studi, la grande partita dell'Intelligenza Artificiale generativa.

Nel 2023, il Symposium riconfigurò il suo titolo in REAACH (*REpresentation Advances And CHallenges*), riprendendo la denominazione dell'Associazione di Promozione Sociale REAACH, (<https://www.reaach.eu/>) appena fondata per indirizzarne gli obiettivi. Il focus del Symposium si ampliò a includere le

relazioni della Rappresentazione con l'Intelligenza Artificiale e la Realtà Estesa e venne strutturato uno schema di parole chiave, quello di cui sopra si è parlato, a guida della costruzione delle proposte. L'ascesa dell'Intelligenza Artificiale generativa si manifestava con evidenza sia nell'ambito del *Cultural Heritage* che dell'*Innovative Design*.

L'attuale REAACH 2024 (<https://www.reaach.eu/symposium-2024/>) ha visto la presentazione di 63 contributi selezionati: 42 in forma orale e 19 in video. Complessivamente i contributi hanno coinvolto 194 studiosi dei cinque continenti.

Due *keynote lectures* hanno caratterizzato le giornate di studi, ampliando lo sguardo sulle prospettive di AI e XR. La prima, svolta da Francesco Carota e Gustavo Garcia do Amaral, ambedue docenti presso la School of Architecture and Design dell'University of Kansas, è intitolata *Revealing and Interpreting Complex Urban Patterns from Location Based Social Network Data. An investigation into Chinese stadiums in the Global South*, la seconda, da parte di Lauren S. Ferro, dell'istituto di ricerca CSIRO's Data61 in Melbourne, *XR's challenges and solutions for cybersecurity*.

