



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

DEPARTMENT
OF HISTORY AND CULTURES

SCUOLA DI SPECIALIZZAZIONE
Beni Archeologici



Techn-Ai: Technologies, Archaeology and Artificial Intelligence

December 9-10th, 2025

Bologna University, Department of History, Cultures and Civilizations (DiSCI), Aula Prodi

In recent years, we have witnessed a growing interest in the application of artificial intelligence (AI) to archaeology, which is significantly enriching the research landscape. Digital tools and methodologies are increasingly being used to complement traditional practices, offering new possibilities for data analysis, management, and interpretation, but also posing new challenges in methodological terms. To reflect on these changes, the Postgraduate School of Archaeological Heritage is organizing the conference “*Techn-Ai: Technologies, Archaeology and Artificial Intelligence*”, which will be structured into two working days. The first day (December 9, from 2:00 PM to 6:30 PM) will focus on the relationship between AI and archaeological materials; the second day (December 10, from 9:00 AM to 2:00 PM) will be dedicated to multi-scale territorial analysis and the use of artificial intelligence in the interpretation of landscapes and contexts. Throughout the two days, there will also be a poster session dedicated to projects by students, who

will present experiences and experiments on the use of new technologies applied to archaeology.

We hope that this meeting will offer not only a space for reflection among scholars but also a formative opportunity for new generations, who are currently facing a rapidly evolving discipline, where the skilled use of artificial intelligence is becoming an increasingly significant competency to learn.

The conference may be followed on the Microsoft Teams platform at the following link: [Techn-Ai: Technologies, Archaeology and Artificial Intelligence December 9-10th, 2025 | Partecipazione alla riunione | Microsoft Teams](#)



DAY 1: DECEMBER 9th

14:15 – 14:30 *Welcome addresses and opening*

Roberto Balzani (Direttore DiSCi, Università di Bologna)

Isabella Baldini (Direttrice della Scuola di Specializzazione in Beni archeologici, Università di Bologna)

14:30 – 14:40 *Introduction to the First Session*

First Session - *Study and Documentation of Archaeological Artefacts through AI*

Session 1 | Moderator: Andrea Gaucci (Università di Bologna)

14:40 – 15:00 **Giorgio Gosti** (Ricercatore TD, ISPC-CNR) – *Deep learning and transfer learning for the classification of photographic heritage and museum collections*

15:00 – 15:20 **Marta Kipke** (Center for Humanities Computing - Aarhus, DK)) – *Machine Learning and the Exploration of Ancient Imagery: Between Connoisseurship and AI*

15:20 – 15:40 **Vincenzo Lombardo** (Università di Torino) – *The challenges of the archaeological data: documentation and engagement with the digital twins*

15:40 – 16:40 Coffee Break and Poster display

16:40 – 17:00 **Maurizio Cattani** and **Enzo Cocca** (Università di Bologna/ CNR) – *Artificial Intelligence and Archaeology: Deep Learning for Morphological Analysis and Automated Typologies of Bronze Age metal axes*

17:00 – 17:20 **Giulia Marsili** and **Giorgio Malagutti** (Università di Bologna) – *Artificial intelligence and deep learning for automatic classification of pottery in archaeology: the Via d'Azeglio project*

17:20–17:40 **Nevio Dubbini** (Università di Pisa) – *AUTOMATA. AUTOMated enriched digitization of Archaeological liThics and cerAMics*

17:40 – 18:20 *Closing Discussion*

DAY 2: DECEMBER 10th

9:10 – 9:20 *Introduction to the Second Session*

Second Session - *Multi-scale Spatial Analysis and Artificial Intelligence*

Session 2 | Moderator: Enrico Giorgi (Università di Bologna)

09:20 – 09:40 **Hector Orengo** and **Iban Berganzo-Besga** (Barcelona Supercomputing Center, Spanish National Supercomputing Institution) – *Emerging Trends in AI for Archaeological Research: from Shallow/Deep Learning to Visual and Tabular Foundation Models*

09:40 – 10:00 **Marco Cavalazzi** and **Cristiano Putzolu** (Università di Bologna) – *Bridging Scales: AI Approaches to 3D Archaeological Data*

10:00 – 11:20 Coffee Break and Poster display

11:20 – 11:40 **Valentina Orrù** and **Nicolò Marchetti** (Università di Bologna) – *Advanced Landscape Interpretation: A Hybrid Approach of Artificial Intelligence and Human Supervision in the Mesopotamian Archaeological Context*

11:40 – 12:00 **Maurizio Cattani**, **Andrea Fiorini** and **Sabrina Gualtieri** (Università di Bologna/CNR) – *GenAI-Assisted Development of Analytical Tools for Archaeological Research: Automated Inclusion Analysis through AI-Enabled Computer Vision*

12:00 – 12:40 *Closing Discussion*

12:40 – 13:10 *Closing Remarks* | **Stefano Campana** (Università degli Studi di Siena)

POSTERS

DECEMBER 9th – *Methodological Reflections and Applications of New Technologies and AI to the Study of Archaeological Materials*

- **G. Bertolino, M. Divincenzo, N. Losacco** (Postgraduate School of Archaeological Heritage, University of Bologna) *Comparative Analysis of 3D Reconstruction Approaches for Archaeological Pottery - The case of Quagliotti-Davanzali necropolis*;
- **D. Frisoni** (PhD Candidate in Cultural and Environmental Heritage, University of Bologna) *CeramicAI: Optimizing the Digital Polishing of Archaeological Drawings through Artificial Intelligence*;
- **M. Lorusso**¹⁻², **A. Palamenghi**²⁻³, **D. Mazzarelli**², **A. Cappella**³, **D. Gibelli**³, **C. Cattaneo**² (¹ Postgraduate School of Archaeological Heritage, University of Bologna; ²LABANOF, University of Milan; ³LAFAS, University of Milan) *3D-3D superimposition for the pair-matching of innominate bones from a real case: a pilot study*;
- **F. Mauro** (PhD in AI for Society, University of Pisa) *Integrating Expert Knowledge and Deep Learning for Pottery Classification: Challenges and Directions*;
- **M. Noris** (Postgraduate School of Archaeological Heritage, Sapienza University of Rome) *The Twelve Labors of AI. Exploring Artificial Intelligence in Museum Storytelling*;
- **L. Pasqualetto** (Postgraduate School of Archaeological Heritage, University of Bologna) *From 3D Acquisition to Production Insights: Methods for the Surface Comparison of Six Attic Askoi from the Valle Trebbia Necropolis, Spina*;
- **S. Passaretta, A. Marino** (Postgraduate School of Archaeological Heritage, University of Salento) *Artificial Intelligence and Archaeological Reconstruction: Epistemological Boundaries and Ethical Challenges*.

DECEMBER 10th – *Innovative approaches to the study and interpretation of archaeological landscapes*

- **C. Albazzi**¹, **L. Pasqualetto**¹, **M. Castoldi**², **F. Orilio**³, **M. Guerra**¹ (¹Postgraduate School of Archaeological Heritage, University of Bologna; ²PhD in Archeology, Sapienza University of Rome; ³ Scholarship holder at University of Bologna) *Comparative Analysis of Digital Survey Methods for the Roman Kiln at Kainua-Marzabotto (Regio I, insula 4): Photogrammetry, LiDAR and NeRF*;
- **C. Amici, P. Campana, G. Filisetti** (Postgraduate School of Archaeological Heritage, University of Bologna) *Integrated Methods for the Study of Ancient Landscapes: Case Studies from Northern Marche Region*;
- **C. Bicchierai, F. Longo** (Postgraduate School of Archaeological Heritage, University of Bologna) *Three-dimensional survey and positioning: advantages, limitations, and the need for digital documentation in complex contexts*;
- **G. Ghiglia** (Postgraduate School of Archaeological Heritage, University of Turin) *Generative AI in Archaeological Illustration: Potential, Pitfalls, and the Challenge of Historical Accuracy*;
- **G. Monte** (Phd University of Catania) *Structuring the Past: Generative AI Text Mining for Archaeological Geo-Data Systems*;
- **F. Orsacchi** (Postgraduate School of Archaeological Heritage, University of Bologna) *The aerial photointerpretation for the study of the historical landscape of WW2. The German bunkers of the Adriatic coast of Italy between Romagna and Marche*;
- **E. Paperini** (PhD, Department of Computer Science, University of Pisa; MAPPA Lab, Department of Civilizations and Forms of Knowledge, University of Pisa) *From Pollen to Biomes through Artificial Intelligence in Landscape Reconstruction*.