

PROGETTO**Supervisore:** Francesca Pola**Titolo:** **Key enabling technologies for sharing and re-imagining contemporary sculpture: the Andrea Cascella Archive****Descrizione del progetto** (Numero di caratteri inclusi spazi: 2.000-3.000):

The present research aims to identify possible applications of Key Enabling Technologies (KET) to improve the accessibility of contemporary art history archives, with reference to Italian sculpture of the second half of the 20th century, through the particularly significant case study constituted from the Andrea Cascella Archive in Milan. Fundamental to allow innovation and cultural and economic growth in multiple sectors, KETs can be a privileged field of experimentation if applied to the field of historical-artistic heritage, where they allow the development of new solutions for tools and models of knowledge devoted to its documentation, preservation, interpretation and re-signification.

The primary objective of this research is to focus on innovative practices centred on the use of KETs, especially Virtual Reality (VR), Augmented Reality (AR) and Artificial Intelligence (AI), applicable to the specific context of the Andrea Cascella Archive, which preserves extensive and diversified documentation of the artistic activity of one of the most interesting Italian sculptors of the second half of the 20th century, Andrea Cascella (1919-1990). In addition to constituting in itself an extraordinary cultural value, still partly less known than the historical importance of this artist might suggest, the variety and stratification of this documentation offers significant opportunities for the development of new solutions through KET: solutions that can together generate new attention for the artist's work, and create wider and more innovative possibilities for its study and enhancement. These hypothetical solutions will have the objective of facilitating a sustainable and inclusive transition of archival material: giving priority to the users needs (especially researchers and visitors), the research will aim to favour the conception of user centred experiences, which combine the physical dimension and the digital one, favouring the accessibility and involvement of a diversified public, and constituting a possible model of innovative perspectives with respect to contemporary sculpture.

The study foresees a digitization and detailed survey of the Andrea Cascella Archive, contextual to a study of the possible application of KETs in this context, the integration of which will take into due consideration factors such as the design of the user interface, the accessibility of information and materials and the integration of physical and digital elements. The analysis is based on an interdisciplinary approach, combining historical-artistic research, archival needs and the study of technological possibilities, connected to each other according to a "human-centric" perspective. The research proposal aims to contribute virtuously to the positive impact of KETs for the conservation, enhancement and accessibility of contemporary sculpture archives, contributing to innovative forms of digitization of this heritage, through the development of solutions based on in-depth historical-artistic knowledge.

Competenze da acquisire dal dottorando (Numero di caratteri inclusi spazi: max 600):

The research products and related skills to be acquired which are required of the PhD student will be both of a scientific nature, i.e. specialized publications and articles, and related to the particular sector of technological innovation related to historical-artistic heritage with which he/she/they will interact, such as, for example, the maturation of decision-making processes and annexed tools functional to development needs of connected to the Italian and European historical-artistic heritage constituted by the typology object of the research.

Bibliografia (max. 15):

- Blackaby, Jim, and Beth Sandore. "Building Integrated Museum Information Retrieval Systems: Practical Approaches to Data Organization and Access." *Archives and Museum Informatics* 11, no. 2 (June 1997): 117–46.
- Colavizza, Giovanni, Tobias Blanke, Charles Jeurgens, and Julia Noordegraaf. "Archives and AI: An Overview of Current Debates and Future Perspectives." *Journal on Computing and Cultural Heritage* 15, no. 1 (February 28, 2022): 1–15.
- Fanini, Bruno, Alfonsina Pagano, Eva Pietroni, Daniele Ferdani, Emanuel Demetrescu, and Augusto Palombini. "Augmented Reality for Cultural Heritage." In *Springer Handbook of Augmented Reality*, edited by Andrew Yeh Ching Nee and Soh Khim Ong, 391–411. Springer Handbooks. Cham: Springer International Publishing, 2023.
- Fontanella, F., F. Colace, M. Molinara, A. Scotto Di Freca, and F. Stanco. "Pattern Recognition and Artificial Intelligence Techniques for Cultural Heritage." *Pattern Recognition Letters* 138 (October 2020): 23–29.
- Karterouli, Konstantina, and Yota Batsaki. "AI and Cultural Heritage Image Collections: Opportunities and Challenges," 2021.
- Luigini, Alessandro, ed. *Proceedings of the 1st International and Interdisciplinary Conference on Digital Environments for Education, Arts and Heritage: EARTH 2018*. 1st ed. 2019. Advances in Intelligent Systems and Computing 919. Cham: Springer International Publishing: Imprint: Springer, 2019.
- Luther, Wolfram, Nelson Baloian, Daniel Biella, and Daniel Sacher. "Digital Twins and Enabling Technologies in Museums and Cultural Heritage: An Overview." *Sensors* 23, no. 3 (February 1, 2023): 1583.
- Pisoni, Galena, Natalia Díaz-Rodríguez, Hannie Gijlers, and Linda Tonolli. "Human-Centered Artificial Intelligence for Designing Accessible Cultural Heritage." *Applied Sciences* 11, no. 2 (January 19, 2021): 870.
- Xie, Jing. "Innovative Design of Artificial Intelligence in Intangible Cultural Heritage." Edited by Lianhui Li. *Scientific Programming* 2022 (July 20, 2022): 1–8.

Periodo di studio e ricerca in Impresa

Il periodo per un minimo di 6 mesi fino a un massimo di 18 mesi, anche non continuativi, è **obbligatorio**.

Il dottorando svolgerà il periodo **OBBLIGATORIO** presso Zenit Arti Audiovisive per n 6 mesi

Sede legale:

Paese	Italia
Città	Torino
Indirizzo	Via Salerno 1

Sede operativa principale, se diversa dalla sede legale, presso cui è svolta l'attività di ricerca del dottorando

Paese	
Città	
Indirizzo	

Periodo di studio e ricerca all'estero

Il periodo per un minimo di 6 mesi fino a un massimo di 12 mesi, anche non continuativi, è **obbligatorio**.

Il dottorando svolgerà il periodo **OBBLIGATORIO** presso Technische Hochschule Köln - University of Applied Sciences - CICS, Cologne Institute of Conservation Sciences per n 6 mesi

Sede legale:

Paese	Germania
Città	Köln / Cologne
Indirizzo	Ubierring 40

Sede operativa principale, se diversa dalla sede legale, presso cui è svolta l'attività di ricerca del dottorando

Paese	
Città	
Indirizzo	

I periodi di cui sopra sono distinti e da svolgere presso soggetti distinti.

Entro fine ottobre 2023 sarà necessario fornire una lettera d'impegno degli enti a ospitare il dottorando (il facsimile della lettera sarà fornita dall'Ufficio Dottorati).