

## Augmenting Cultural Heritage Through 4.0 Technologies: A Research on the Archival Jewelry of the Gianfranco Ferré Research Center

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**Abstract :** Looking at design artifacts as bearers and disseminators of material knowledge and intangible socio-cultural meanings, the significance of archival jewelry was investigated following digital cultural heritage research streams. The application of the reverse engineering concept guided the research path: starting with the study of Gianfranco Ferré's archival jewelry and analyzing its technical heritage and symbolic value, the digitalization, dematerialization, and rematerialization of the artifact were carried out. According to that, the proposed paper results from research conducted within the residency program between the Gianfranco Ferré Research Center (GFRC) and Massachusetts Institute of Technology (MIT), involving both the Design and Mechanical Engineering Departments of Politecnico di Milano. The paper will discuss the analysis of traditional design manufacturing techniques, re-imagined through 3D scanning, 3D modeling, and 3D printing technical knowledge while emphasizing the significance of the designer's role as an explorer of socio-cultural meanings and technological mediators in the analog-digital-analog transition.

**Keywords :** Archival jewelry, cultural heritage, rematerialization, reverse engineering.

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