

Save Our Memory

A Look Inside the Restoration of Historic Photos

In 1852 Leopoldo Alinari, with his brothers Giuseppe and Romualdo, founded a photographic workshop in Florence, which is at the heart of the firm that still bears his name: Fratelli Alinari. It was the beginning of a unique endeavour that specialised in photographic portraiture, works of art and historical monuments, achieving national and international recognition. With the help of stereomicroscopy technology from Leica Microsystems Alinari is able to preserve the cultural heritage – our memory – for the future generations of professional restorers.

The name of Alinari guarantees more than 150 years of experience and state of the art professional technology. Today there are over 2,750,000 b/w and colour negatives in various collections, from plates to colour photos, and over 900,000 vintage prints, including salted paper, albumen, bromide prints, calotype negatives, daguerreotypes, etc., preserved in the collection of 6,000 original albums. Today, Alinari is working on a solution to provide semi-automatic image restoration. The project is oriented to develop novel methodologies for digital images restoration, image enhancement, image restoration and long term image preservation, including enriched and advanced solutions to extended metadata and text descriptors. (www.alinari.it).

Photographic restoration laboratory

Our restoration laboratory pursues conservation treatment and restoration from the great public archives deposited in museums, libraries, institutes and academies to materials belonging to the archives of industries and firms as well as private individuals. The laboratory is available for consultation and advisory services and various types of conservation treatment.

The Alinari laboratory engages in conservation treatment of many types of materials from the oldest daguerreotypes to calotypes, photographic prints, rare negatives on paper, collodion and silver glass-plate, up to the most recent colour proofs and negatives. We use the last generation of Leica Micro systems' stereomicroscopes, Leica M205 C with FusionOptics™, video and 3D analysis for acquiring, storing, annotating and displaying high quality images of our heritage which needs restoration.

The aim of the work is to combine into one single savvy and trusted solution, the various tools and activities involved in the digitization process, in order to process, professionally speaking, large scale of data (still and moving images) in a very speedy and economically driven and high quality way (from digital capture, via automatic text annotation and metadata integration to post processing digital image enhancement) for long term digital preservation.

Alinari's courses are unique for the collaboration of companies, universities and institutions for teaching and providing continuous upgrades of knowledge to professionals on how to preserve the cultural heritage: the photographic degradation is an intrinsic process due to the nature of photography. In fact, it is generated from a chemical and physical alteration of the light on the photo-sensitive essences. The restorer and conservation managers aim at slowing down such process, where possible, by operating on the micro ambient (conservation cases and boxes) and on the macro ambient (archive rooms and thermo-hydrometrical parameter management: humidity, lighting, quality of the air, temperature, etc.).

Further information and resources

1. October 2008, number 2, reSolution Leica Microsystem newsletter
2. Sam H. Minelli: Alinari 24 ORE spa, Florence, Italy
3. FIRB project, 2008, Andrea de Polo

After appropriate analysis and the recognition of the photographic process, the restorer can execute direct restoration of the photography.

Our professional courses take advantage of the digital management of the microscope: we project the microscope view through the control panel of the microscope, we provide live micro-navigation and 3D views of the degradations. The researcher and the restorer can annotate the pictures using a wide range of tools for measurement and reporting.

Video sequences are executed to see and evaluate how some chemical agents react on the paper or on other photographic surfaces. With the multi-point focus we obtain images, which could not be realised until now: better quality and more information on the object under analysis.

Our services are also offered to government bodies for analysis and reporting about photography authentication, courses/workshops and publications for safeguarding photographic collections, such as ANAI (Associazione Nazionale Archivistica Italiana), and the Ministry for Cultural Heritage and Activities.

The project includes some completely novel tools for digital image restoration. In fact, a restoration process based on knowledge has to be able to receive experience about new kinds of defects and effective algorithms for their restoration: the model constantly grows while it is being used. The restoration algorithms consider both physical-chemical causes and the human eye perception of the defects. Moreover, image and degradation metarepresentations can also be used in more sophisticated applications such as content retrieval and automatic definition of picture degradation typologies. Finally, the high quality of digital content is guaranteed by developing technologies of chromatic rendering able to calibrate and certify colors during image acquisition and rendering.

Digital restoration algorithms are inserted in a "reference context", including metarepresentations of images and associated degradation typologies. This aspect represents by itself an absolutely innovative approach in the field of digital restoration. In order to exploit the computability of meta-representations, the project requires the organization of a knowledge-base in which successfully performed restorations will be preserved, along with the meta-representations of the analyzed degradation typologies. Therefore, the restoration of a novel image will take advantage of the previously gathered knowledge, selecting the degradation meta-representation which is closest to the analyzed one and applying a previously successful restoration method. Similarity measures will be achieved by means of optimized metric models according to the analyzed domain.

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