

3D TECHNOLOGIES FOR CULTURAL HERITAGE: LASER SCANNING AND PHOTOGRAMMETRY
FROM THE MOUNTAIN TO THE SEA... AND BELOW

The accurate documentation in 3D of (potentially) any kind of artefact –from small object to entire pieces of landscape– is definitely one of the challenges in modern archaeological research. The possibility to achieve this goal in an affordable and easy way makes this an attractive challenge and it allows imagining more and more scenarios where such an approach may be of high value. As one of the most quickly developing fields of research, digital photogrammetry is the unique tool that allows the extraction of (relative or absolute) metric information for any object photographed –today or in the past!– from more than one point of view. 3D information can now be processed and produce new data or also 3D displays of items that may have been lost for any reason. Furthermore, 3D is quickly becoming an important tool in archaeological research, providing the possibility to explore structural details of the modeled objects or create replicas by 3D printing processes.

The one-day workshop “3D Technologies for Cultural Heritage” will provide hands-on experience and a preferable best-practice or workflow for extracting three dimensional information from archive historical photographs and recently acquired ones, by means of user-friendly software solution (Agisoft MetaShape, provided by the organizers with full 30-days license). A panoramic of free/open-source tools will be provided as well, highlighting weak and strong point and applicability. Photogrammetry will be sided with Terrestrial Laser Scanning with an overview of field data collection, processing and integration with other technologies. It is an informal, friendly and open hands-on experience, where you will be provided with basic training with photogrammetry software and where you will have a chance to discuss and share your own examples and workflows (if any).

The workshop is organized with the collaboration of the Laboratory of Geophysical Satellite Remote Sensing and Archaeoenvironment of IMS-FORTH, the Institute of Heritage Science of National Research Council and the Department of History and Archaeology of University of Crete. Is scheduled for **Monday November 18th, 2024** and it will be held in the premises of the university excavation in Elefterna.

Participation is provided with no registration cost as it falls under the framework of the project Clepsydra (<https://clepsydra.ims.forth.gr/>) funded by the Hellenic Foundation of Research and Innovation. No workstations will be provided for the workshop, so you are kindly asked to join with your own laptop or be prepared to share with another participant. You are asked also to take with you your own camera (better if DSLR or otherwise... a simple mobile phone should do the work) and required cables or card readers to download the photos we are going to collect in the field. No specific previous knowledge or skills are required. At the end of the workshop, a certificate of attendance will be provided by the hosting Institute for Mediterranean Studies – GeoSat ReSeArch Lab.

For logistic reasons, places will be limited to 10-15 attendees and the selection will be done on the base of the application form and with the policy of “first-come, first-served”. The **deadline to submit the application is Wednesday November 13th, 2024**.

For more information and the potential candidates can refer to Dr. Nikos Papadopoulos, Research Director of IMS-FORTH and scientific supervisor of Clepsydra project at nikos@ims.forth.gr.

WORKSHOP PROGRAM – MONDAY 18/11/2024

9:00-9:45 Welcome and participant's laptops preparation (WiFi connection, software installation etc.);

9:45-10:15 Photogrammetry, principles and applications (archaeology and CH). Stereoscopic view... in practice;

10:15-10:45 Case studies at different scales (compared with LaserScanning): excavation context; Historical Buildings; Landscapes;

10:45-12:00 Data collection in the field: photogrammetry (remember to take your own camera with you) and laser scanning (demo in the field);

12:00-14:00 Laser scanning: data downloading and processing;

14:00-15:00 Lunch break.

15:00-16:00 Photogrammetry hands-on: from the photographs to the final output.