

3rd CAA-GR Conference Limassol, Cyprus 2018. Spreading Excellence in Computer Applications for Archaeology and Cultural Heritage

**Workshop on 3D data processing for built heritage and archaeology:
laser scanner and other low cost solutions**

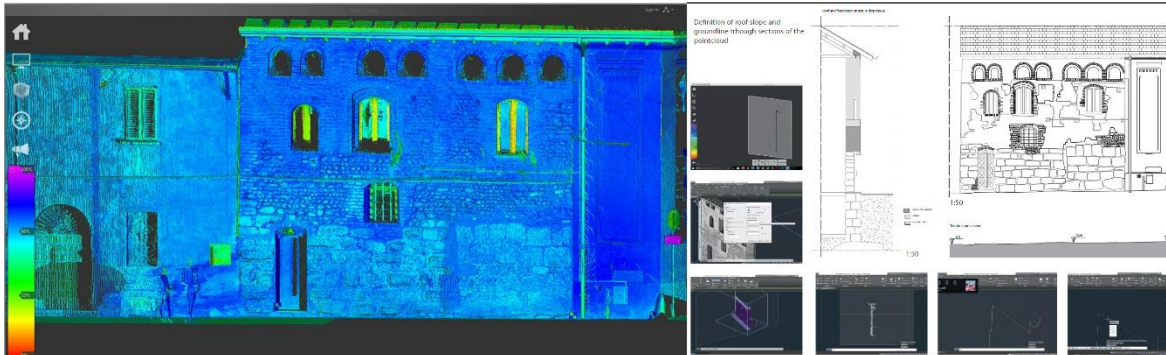
Limassol, Monday June 18th, 2018

Instructors:

Luigi Barazzetti, Assistant Professor, Engineer, Politecnico di Milano

Branka Cuca, Assistant Professor, Architect, Politecnico di Milano

Riccardo Valente, PostDoc, Archaeologist, Politecnico di Milano



The Workshop aims to illustrate a complete digital workflow for 3D data processing starting from laser scanner point clouds and 360° images acquired using low-cost cameras. The first part of the workshop will be dedicated to on-site instrument illustration and data acquisition with participants. Second part will be divided in i) a brief overview of the digital workflow for case studies already conducted by the instructors and ii) a tailored hands-on session. Participants will be encouraged to work in small groups in order to produce 3D deliverables such as orthophotos, Digital Elevation Models, textured models as well as CAD drawings such as section, plans and elevations.

The workshop addresses mostly the needs of archaeologist, architects, engineers and other professionals working on built cultural heritage but anyone interested is welcome to join. No prior knowledge of advanced surveying and modelling techniques is necessary, all activities will be fully assisted by the instructors.

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TENTATIVE PROGRAMME

In-situ	9h30 – 11h00	On the site activities: Limassol case study Illustration of FARO Laser Scanner for point cloud data acquisition Illustration of 360° camera for photogrammetric data acquisition Instruments in action: real-time data acquisition of the Limassol case study
In classroom with computers/personal laptops	11h15 – 13h00	Illustration by instructors: brief overview of 2 case studies - From scan to CAD/BIM - 3D from low-cost 360° camera Illustration by instructors: Limassol case study Visualisation of data acquired + Registration of point clouds
BREAK		
In classroom with computers/personal laptops	14h30 – 17h00	Assisted hands-on session: - Processing of 360° images for metric reconstruction - Point cloud data processing: extractions of sections, plans and elevation - CAD drawing from point clouds - Surface generation from images/laser data

Software required:

AutoCAD with Recap for PC (Windows only no MAC)

DEMO trial 30days (version after 2015!) can be downloaded here:

<https://www.autodesk.com/products/autocad/free-trial>

IMPORTANT: if you download AutoCAD, RECAP is already included (vice versa NO!)

Photoscan Agisoft

DEMO trial 30days can be downloaded here:

<http://www.agisoft.com/downloads/installer/>

CloudCompare

OpenSource software, it can be downloaded here:

www.danielgm.net/cc

NOTE for participants: It is advisable to come with your own laptop with the required software already installed. It will be possible to follow the hands-on session in small groups (3-4 people), in this case one PC per group will be enough.