

Dense Point clouds from images for Cultural Heritage Documentation: theoretical and practical aspects

To register for the tutorial, contact:

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Targeted audience	Architects, archaeologists, conservation specialists, surveyors
Objectives	To learn theoretical and practical aspects of Dense Point clouds from images for Cultural Heritage Documentation.
Programme	<ul style="list-style-type: none"> • In the mid-2000's, with the convergence of powerful computers, high-quality images and efficient algorithms for tie point matching, such as Scale-Invariant Feature Transform - SIFT (Lowe, 2004) and dense matching, e.g. SGM - Semi-Global Matching (Hirschmüller 2008), new image-based methods were developed, able to automatically produce dense 3D point clouds, with realistic and precise colors. • Open source and free software appeared little by little on the web, such as "Micmac", a multi-resolution and optimization-based image matching software designed at IGN France (Pierrot-Deseilligny, Paparoditis 2006), and PMVS (Furukawa, Ponce 2010; PMVS 2012). Automatic tools to register the images were also produced, like Apero (Pierrot-Deseilligny, Cléry, 2011), and Bundler (Snavely et al. 2006). • These fully automatic programs, running on standard computers, have lately started to reach new communities of users such as architects, archaeologists and geologists, who used to be reluctant to employ photogrammetry for their work, because of the high level of skills required combined with the dissuasive price of the equipment. • These tutorials are meant to look back over the potential and the limits of those new image-based methods to produce 3D point clouds, in the context of Cultural Heritage Documentation.
Training certificate	Attendance certificate
Teaching methods	Presentation, tutorials, case study
Required skills to attend the training	Basics in cultural heritage documentation
Duration	1,5 day (10 hours)
Dates	Sunday 09/01/13 from 2 pm to 6 pm (4 hours) Monday 09/02/13 from 08 am to 3 pm (6 hours), lunch included (1 hour)
Location	INSA de Strasbourg 24 bd de La Victoire 67000 STRASBOURG

Persons in charge	<p>Prof. Dr.-Ing. Pierre GRUSSENMEYER <i>INSA Graduate School of Science and Technology</i> <i>Icube Laboratory UMR 7357</i> <i>Photogrammetry and Geomatics Group</i></p> <p><i>Trainers:</i></p> <ul style="list-style-type: none">• Raphaële HENO, CIPA Board Member• Livio DE LUCA and Emmanuel ALBY, architects
Individual fee	EUR 225,-