



Eurographics 2013
May 6-10, Girona (Spain)

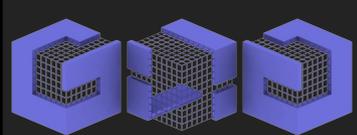


Granada Graphics Group

Eurographics 2013 Lab presentation

D. Martín, J.C. Torres

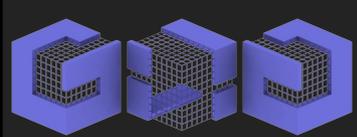
<http://lrv.ugr.es>



Granada Graphics Group

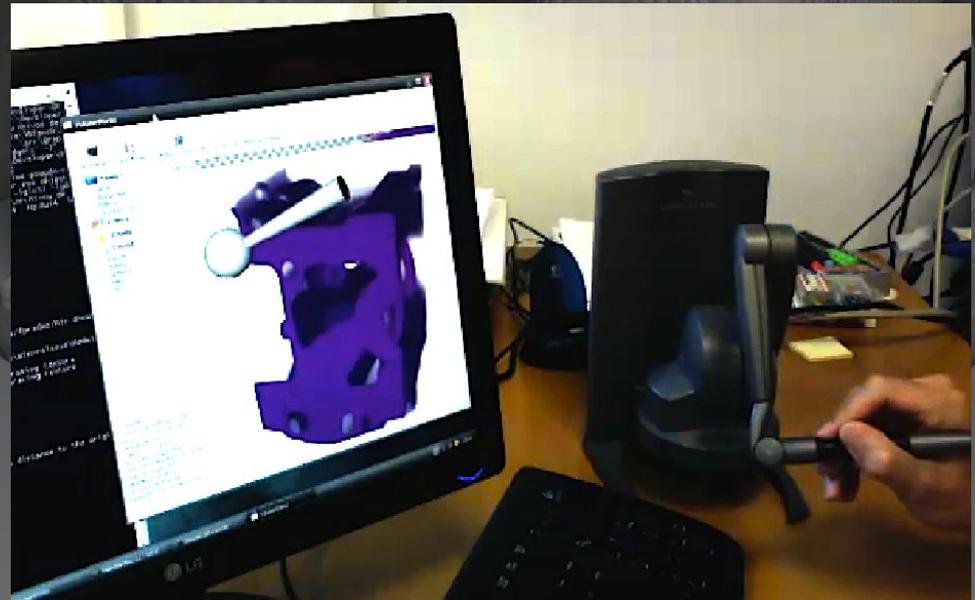
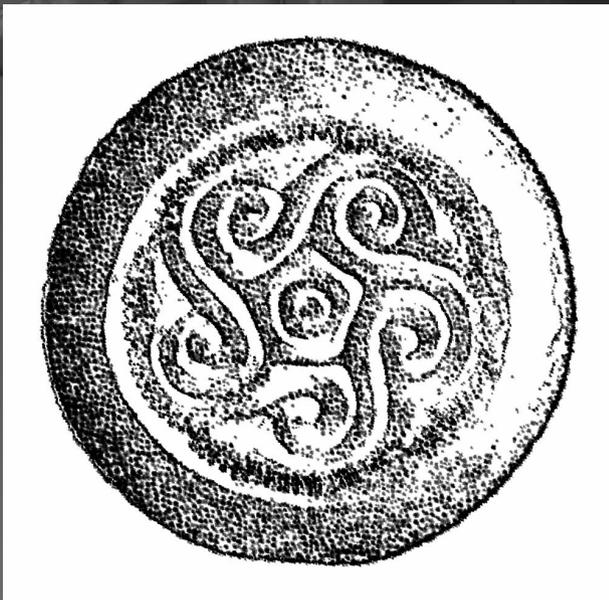
- Created in 1996
- Own lab (Virtual Reality Lab)
- 7 staff researcher and 10 Phd students
- We hosted EG'2003

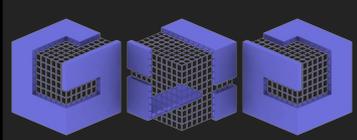




Research topics

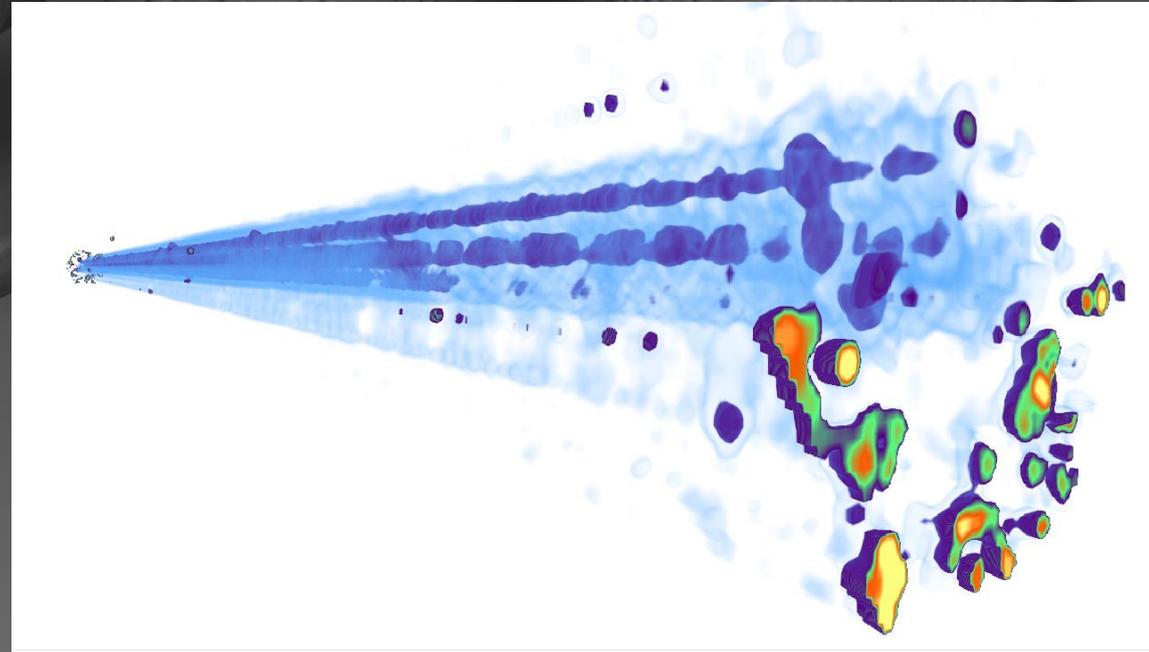
- **Non-photo-realistic rendering.** Stippling. Silhouettes. Stylizing.
- **Virtual reality.** Interaction techniques. Tracking systems. Haptic interaction.
- **Colour.** Restoration of art work. Spectroscopy for colour restoration.

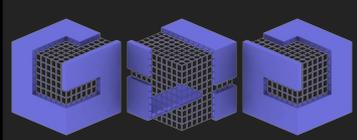




Research topics

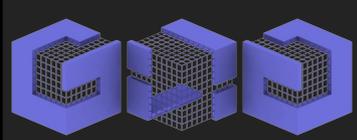
- Information systems for **cultural heritage**.
- **3D digitization**. Laser scanner. Structure from motion. Mesh processing.
- **Volume Visualization** for Medical and Astrophysics.





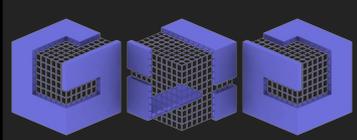
Facilities

- **Powerwall.** 7.5 x 2.5 m stereo display, using back projection, passive stereo and optic tracking.
- **Stereoscopic table.** Orientable desk passive stereo and magnetic tracking, developed by Moving group.
- **Portable RV system.** Use passive stereo and magnetic tracking, developed by Moving group.
- **HMD,** nVisor SX111 system.
- **Sensegraphics 3D-IW immersive workbench.**
- **Laser scanner Minolta Vivid-910.**
- **Time of flight laser scanner Callidus CP3200.**



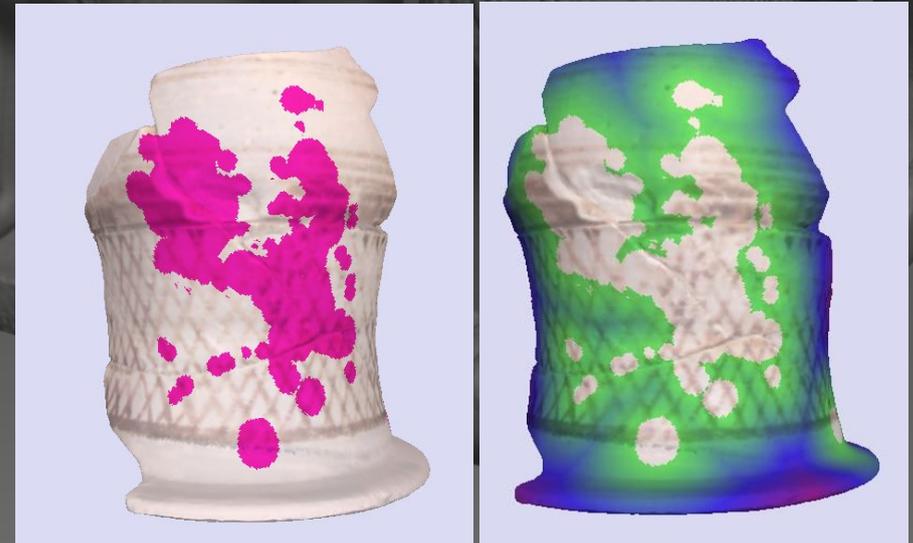
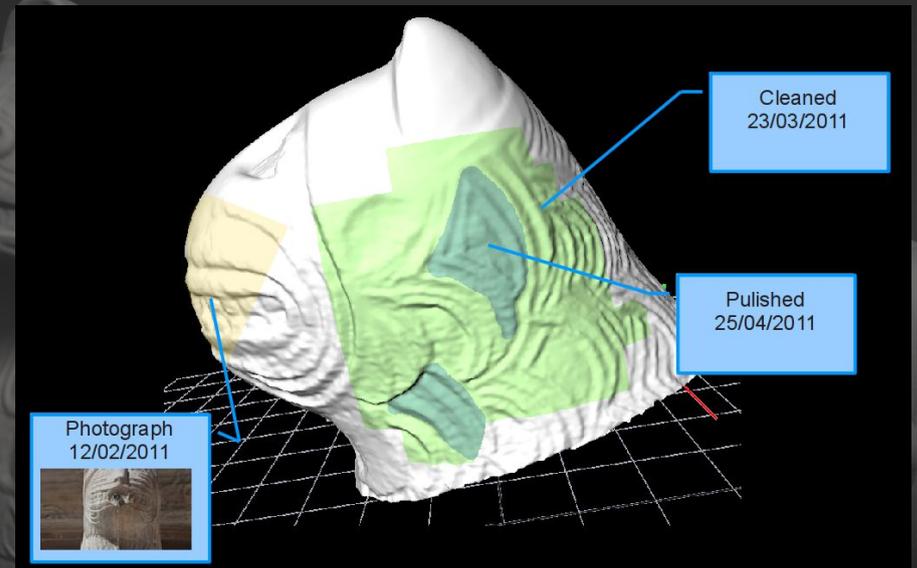
Collaborations

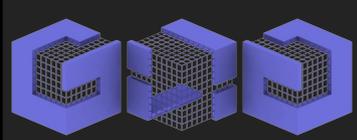
- Cultural Heritage sites: Alhambra, Itálica and the Andalucian Institute for Iberian Archaeology
- Industrial partners: Secuoya group, Intelligenza Dynamics, Virtum Graphics.
- Research labs: University of Jaén, Polytechnic University of Catalonia, University Paris-Sud, CNR-Visual Computing Group.



Cultural Heritage Information System

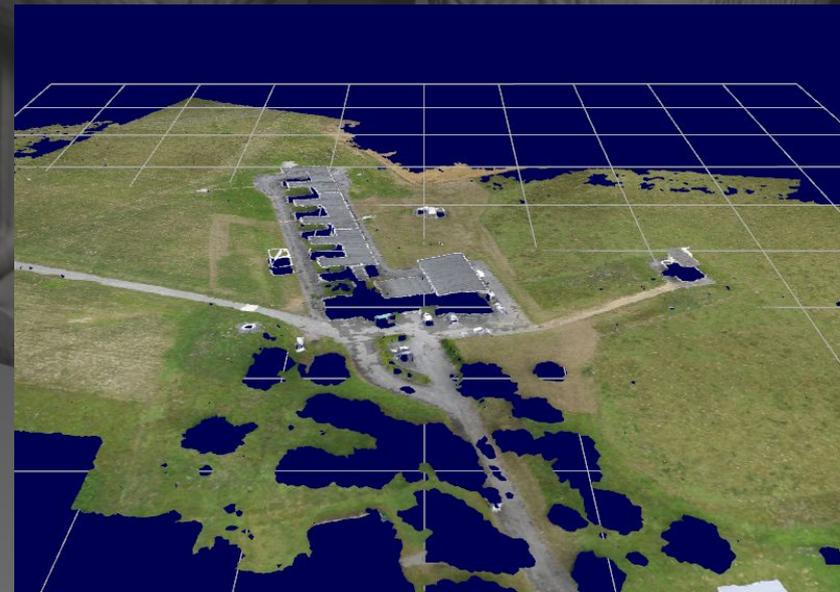
- Manage information layer on a 3D model.
- Layer composition using statistical, spatial, arithmetic and logic operations
- Edit, render and query.

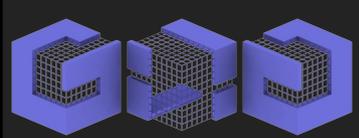




UAV-Cartograph

- Generate high quality DEM models from UAV quad-copters aerial photographs.
- Use Structure from Motion.

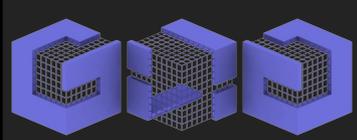




3D digitizing of heritage buildings using UAVS

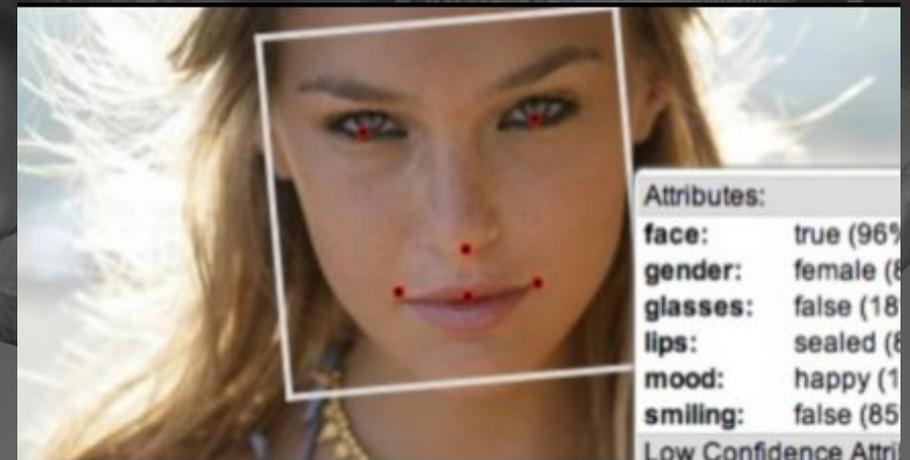
- Adapt UAV technology and Structure from Motion reconstruction software to carry on 3D digitization of outdoors and inside of large buildings.

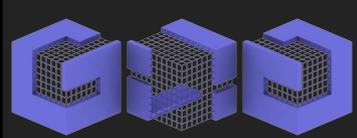




Adapta

- Customize digital content.
- Recognize audience on public places.
- Select and generate digital content and interaction method adapted to the audience.

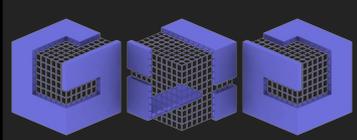




Museum of the Lion Court at the Alhambra

- Generate 3D interactive application to show the restoration process performed on the Lion fountain.
- Will be shown at the Alhambra museum.





Future of the lab

- Small but cohesive and experienced group
- Phd programme on Computer Graphics
- Growing with new Phd student every years
- Technology transfer throw our spin-off (Virtum Graphics)

