



## UvA-DARE (Digital Academic Repository)

### Interactive spatial augmented reality in the Allard-Pierson museum: Exploration of cultural artifacts by simple finger pointing

Hupperetz, W.M.H.; van der Vaart, M.J.; Reuter, P.; Ridet, B.; Granier, X.; Ray, C.A.

**Publication date**

2013

**Document Version**

Author accepted manuscript

[Link to publication](#)

**Citation for published version (APA):**

Hupperetz, W. M. H., van der Vaart, M. J., Reuter, P., Ridet, B., Granier, X., & Ray, C. A. (2013). *Interactive spatial augmented reality in the Allard-Pierson museum: Exploration of cultural artifacts by simple finger pointing*. 51-52. Poster session presented at Digital Heritage 2013. <https://www.youtube.com/watch?v=tmM1MzVvMp0>

**General rights**

It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

**Disclaimer/Complaints regulations**

If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: <https://uba.uva.nl/en/contact>, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.

### 3.5.5 Interactive spatial augmented reality in the Allard-Pierson museum: Exploration of cultural artifacts by simple finger pointing



Brett Ridel, Patrick Reuter, Xavier Granier – INRIA and University of Bordeaux;  
Merel van der Vaart, Wim Hupperetz, Christie Ray - Allard Pierson Museum

HT3: Museums & Collections | T2: Visualization and Interaction

Cultural heritage artifacts often suffer from aging effects that make important details disappear. These lost details may either concern geometric properties such as the wearing out of fine inscriptions, or they may concern appearance properties such as fading color.

Most often, there are additional resources from the corpus that carry information about the lost detail. The separate exhibition of the real physical artifact and the additional information requires a cognitive overload to establish the link between both, and thus hinders the global understanding.



This demonstration deals with a real artifact that is exposed in the Allard Pierson Museum in Amsterdam (Netherlands), a relief fragment from the wall of a mastaba (inv. Nr. APM 8850). There are parts of two scenes on this fragment – on the left the leg of an ox is being

cut of. The text urges them to hurry up. On the right, someone is playing a flute, with a description of this in the text above his head. This limestone relief dates in the 4<sup>th</sup> or 5<sup>th</sup> dynasty (c. 2600-2350 BC). The color information is no more present on the artifact.



We use spatial augmented reality to superimpose directly over the real artifact the missing color information by using a video projector. For an interactive experience, the color information can be explored by simple finger pointing. This is far

better than a permanent superimposition, since switching between the real artifact and the additional information is natural and can be done locally. The finger tracking is done by infrared sensing with the LeapMotion device, and the accurate color information can be projected due to a prior 3D acquisition of the real artifact.

Our setup makes advanced 3D analysis accessible to the greater public with an everyday gesture, by naturally combining the inspection of the real object and the virtual object in a co-located interaction and visualization space.

#### *Project Authors:*

B. Ridel; P. Reuter; M. van der Vaart; W. Hupperetz; C. Ray; X. Granier

#### *Involved Institutions:*

The Allard Pierson Museum, Amsterdam, Netherlands. <http://allardpiersonmuseum.nl/>  
Inria Bordeaux Sud-Ouest, France,  
University Bordeaux, France

#### *Video:*

[https://www.youtube.com/watch?feature=player\\_embedded&v=trnM1MzVWMp0](https://www.youtube.com/watch?feature=player_embedded&v=trnM1MzVWMp0)