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Introduction to - Photogrammetry -

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Lesson Plan

- Session 2: This interactive session will enable the students to give feedback on their experience of working with the initial set of photos. This session is to discuss the particular challenges encountered by the students during their first foray into photogrammetry, and to suggest and/or report back on any possible solutions they will have discovered and implemented.

  The students will then be given a second set of photographs, and set the task of completing the photogrammetry workflow with these images.

- Session 3: This final session is also an interactive seminar, in which students are able to give feedback and discuss their experiences of repeating the photogrammetry workflow with the second set of photographs. This will be an opportunity to celebrate the successful completion of the seminar, and to discuss possibilities and opportunities for future research and engagement.

Today

Overview of 3D modelling in GLAM
(Galleries Libraries Archives Museums) and cultural heritage

- 3D models as part of research process
- Impact and Engagement
- Challenges and Obstacles
- Project planning, collaboration and data preservation

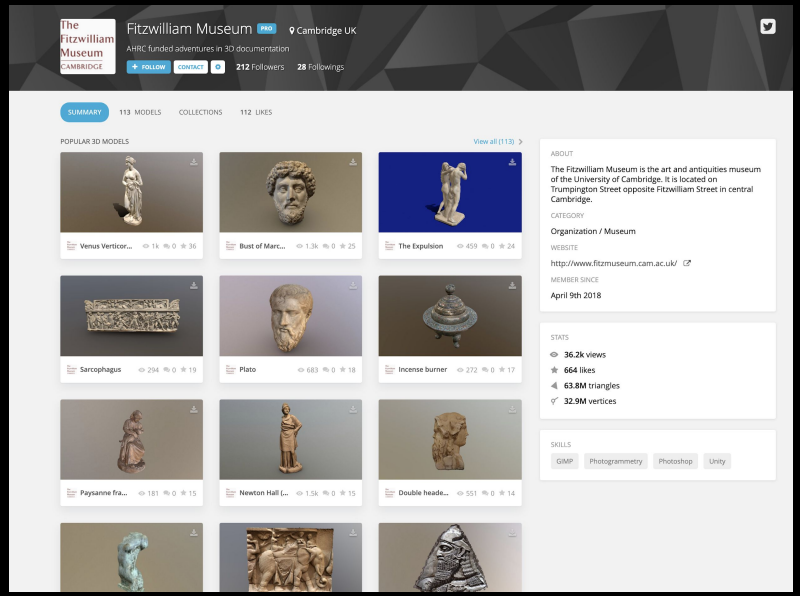
Doing photogrammetry - three case studies

- British Museum Cuneiform Tablets (Terhi)
- National Museum of Australia Boab Nuts (Terhi)
- ANU CLassics Museum small objects collection (Katrina)

Photogrammetry Process - a 5 minute primer!

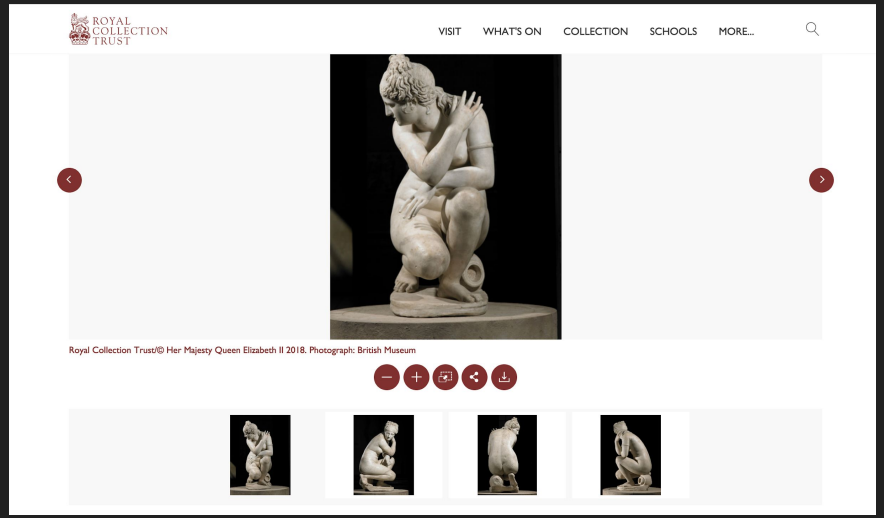
Questions and Discussion

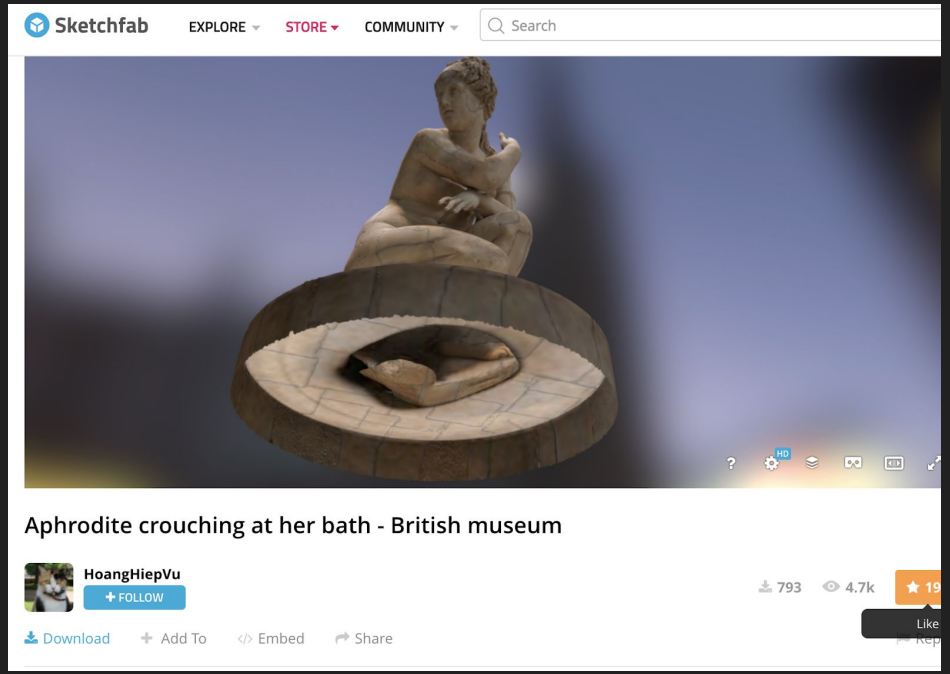
3D models and art history/curatorial research



- Increasingly popular but still not widespread compared to mass digitisation of collections in 2D
- Focus tends to be on sculpture and material culture objects
- Improving techniques allow high quality reproduction of more types of material
- Focus still mainly on public engagement

digitisation is an act of interpretation

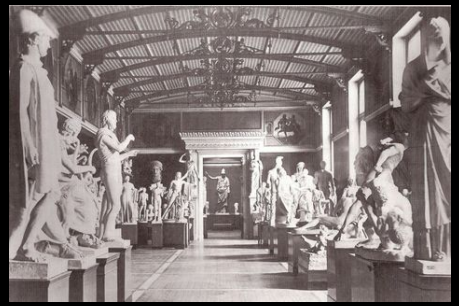




Art Historian - consumer vs creator in the digital world

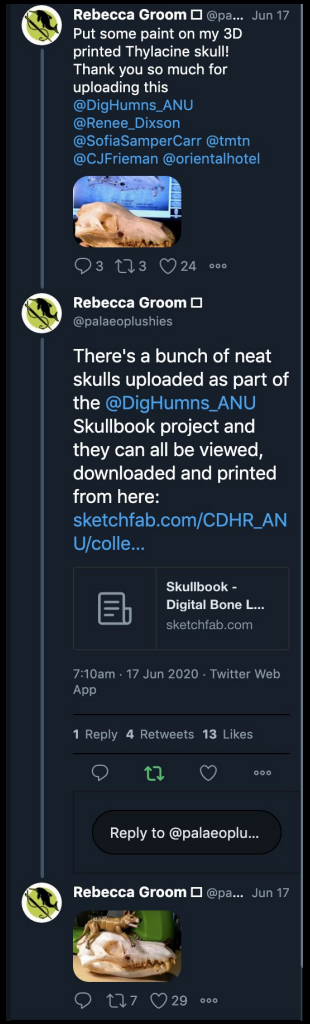
Practice-led research models?

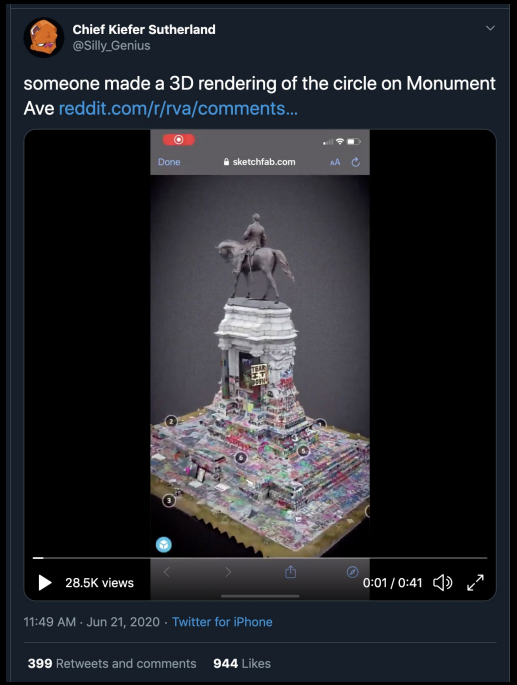
Thinking about methods methodology and digital tools

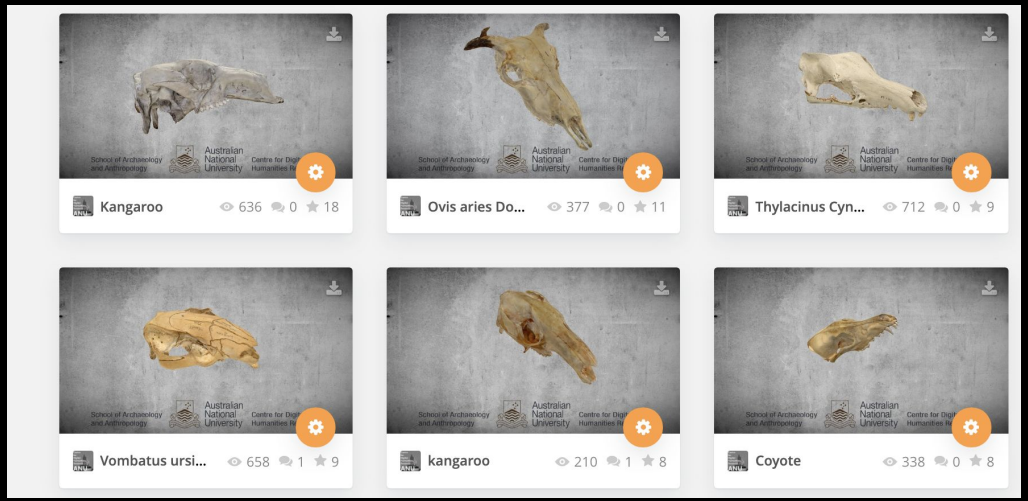


Impact and Engagement

Think laterally about how the data and research you do can be engaged with. Keep records of this!

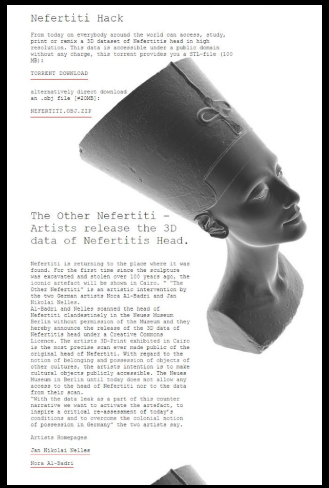






Challenges and Obstacles

Access and object handling | Copyright | Open access and ownership



Nefertiti Hack

From today on everybody around the world can access, study, print or remix a 3D dataset of Nefertitis head in high resolution. This data is accessible under a public domain without any charge, this torrent provides you a STL-file (100 MB):

TORRENT DOWNLOAD

alternatively direct download an .obj file (*20MB):

NEFERTITI.OBJ.ZIP

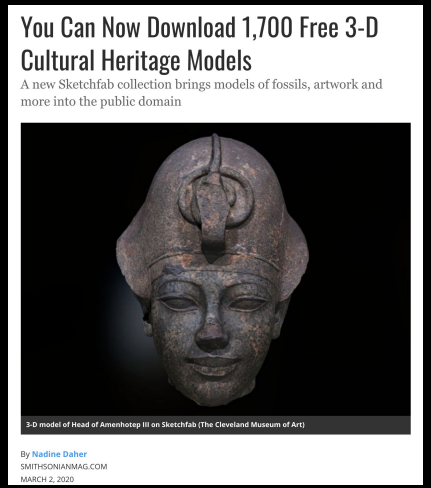
The Other Nefertiti - Artists release the 3D data of Nefertitis Head.

Nefertiti is returning to the place where it was found. For the first time since the sculpture was excavated and stolen over 100 years ago, the iconic artefact will be shown in Cairo. " The Other Nefertiti" is an artistic intervention by the two German artists Nora Al-Badri and Jan Nikolai Welles.
Al-Badri and Welles scanned the head of Nefertiti clandestinely in the Neues Museum Berlin without permission of the Museum and they hereby announce the release of the 3D data of Nefertitis head under a Creative Commons License. The artists 3D-Print exhibited in Cairo is the must precise scan ever made public of the original head of Nefertiti. With regard to the notion of belonging and possession of objects of other cultures, the artists intention is to make cultural objects publicly accessible. The Neues Museum in Berlin until today does not allow any access to the head of Nefertiti nor to the data from their scan.
"With the data leak as a part of this counter narrative we want to activate the artefact, to inspire a critical re-assessment of today's conditions and to overcome the colonial notion of possession in Germany" the two artists say.

Artists Homepages

Jan Nikolai Welles

Nora Al-Badri



You Can Now Download 1,700 Free 3-D Cultural Heritage Models

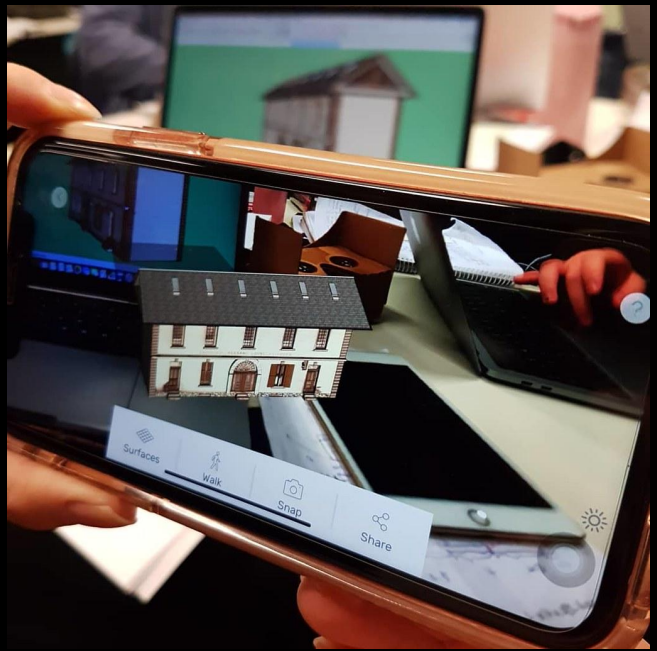
A new Sketchfab collection brings models of fossils, artwork and more into the public domain

3-D model of Head of Amenhotep III on Sketchfab (The Cleveland Museum of Art)

By Nadine Daher
SMITHSONIANMAG.COM
MARCH 2, 2020

Project management and collaboration

Setting up | Data management | Future preservation



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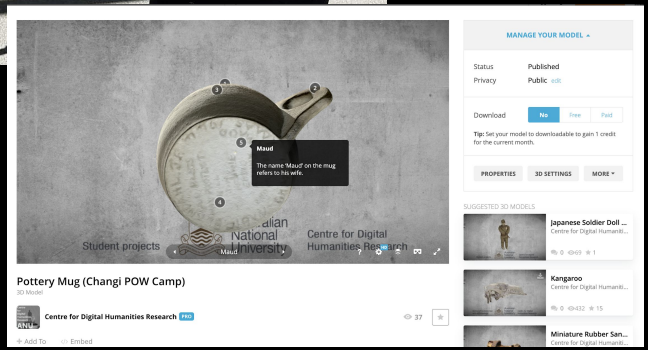
Masters level student carrying out photogrammetry at the War Memorial as part of the HUMN3001/HUMN6003 course (run by Dr Katrina Grant)

3D modelling workshop with the National Museum of Australia's Digital Team, 2019



Cuneiform Tablets at the British Museum

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Photogrammetry: science of making measurements from photographs.

Outputs are typically maps, drawings, 3D models of real-world object, site, or scene.

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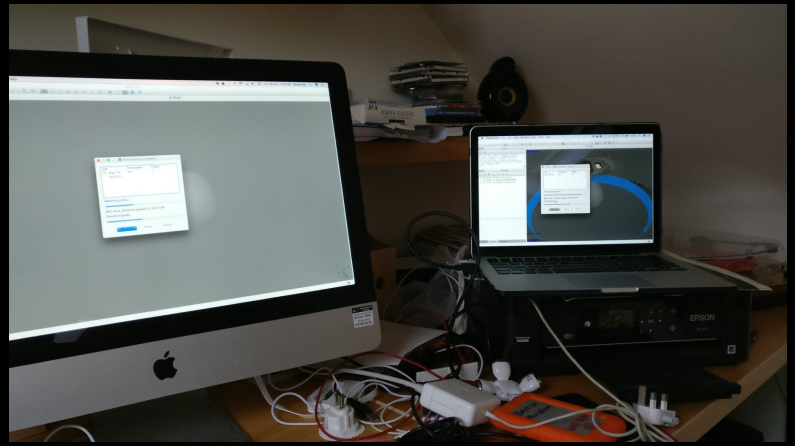
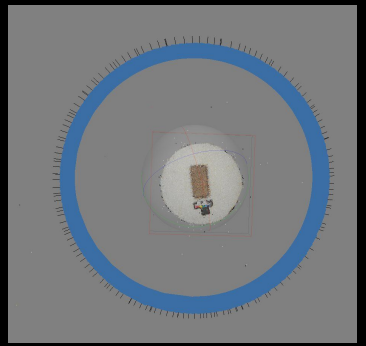
https://twitter.com/DEJPett/status/823904546577649664/video/1





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103040

- Stamp for bricks
- Naram-Sin
  - ca. 2254-2218 BC
- 88 images
- Google Pixel

http://www.britishmuseum.org/collectionimages/AN01480/AN01480857_001_l.jpg

https://sketchfab.com/tmtn/collections/cuneiform-from-the-british-museum

Boab Nuts at the National Museum of Australia

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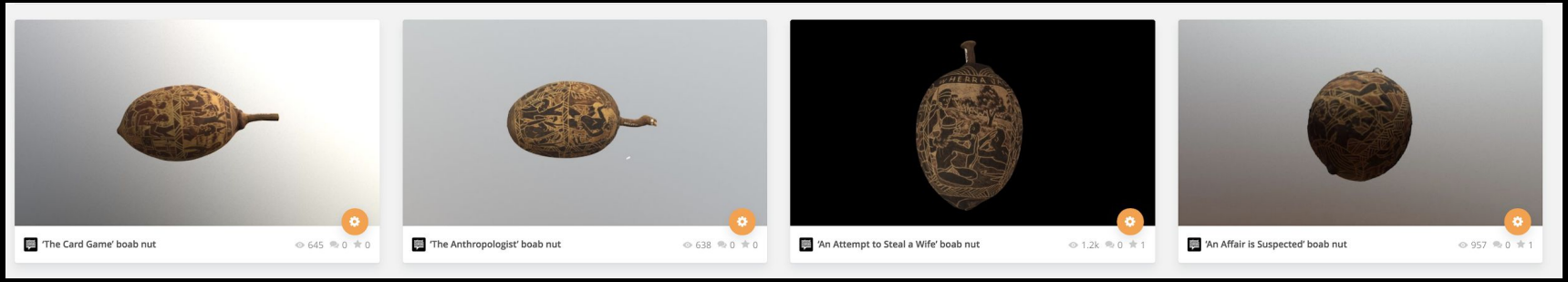
https://sketchfab.com/tmtn/collections/boab-nuts-from-the-national-museum-of-australia



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Setting up carefully….

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Taking photos carefully….curator had to turn the object!

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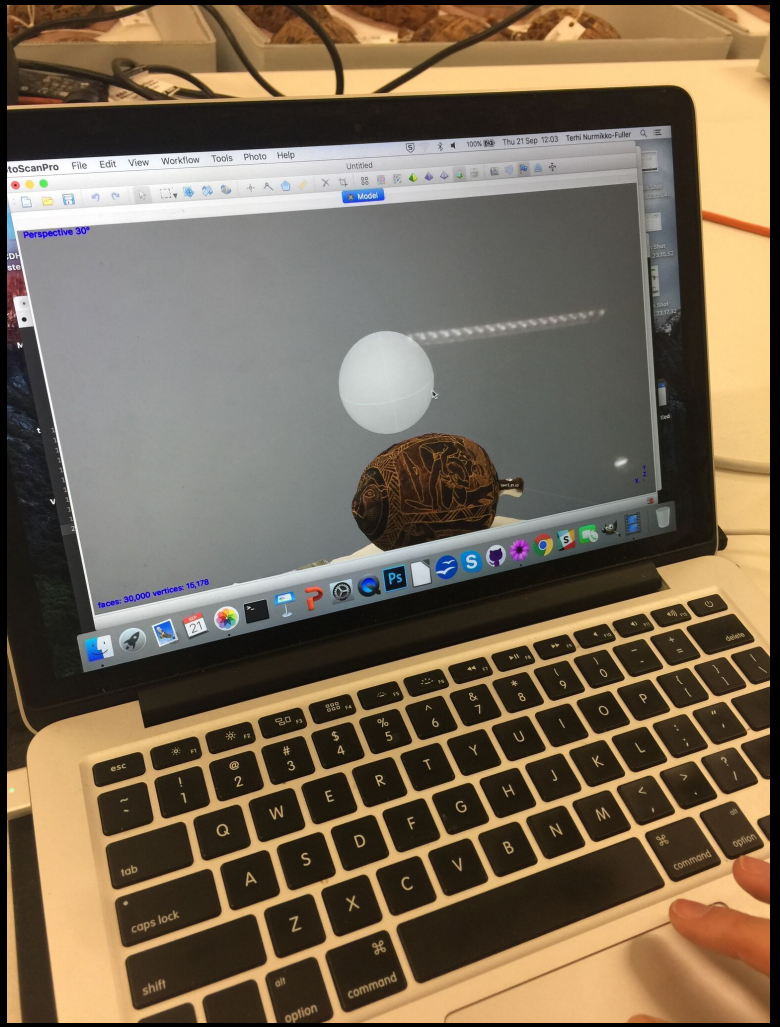

Processing prototype on site!

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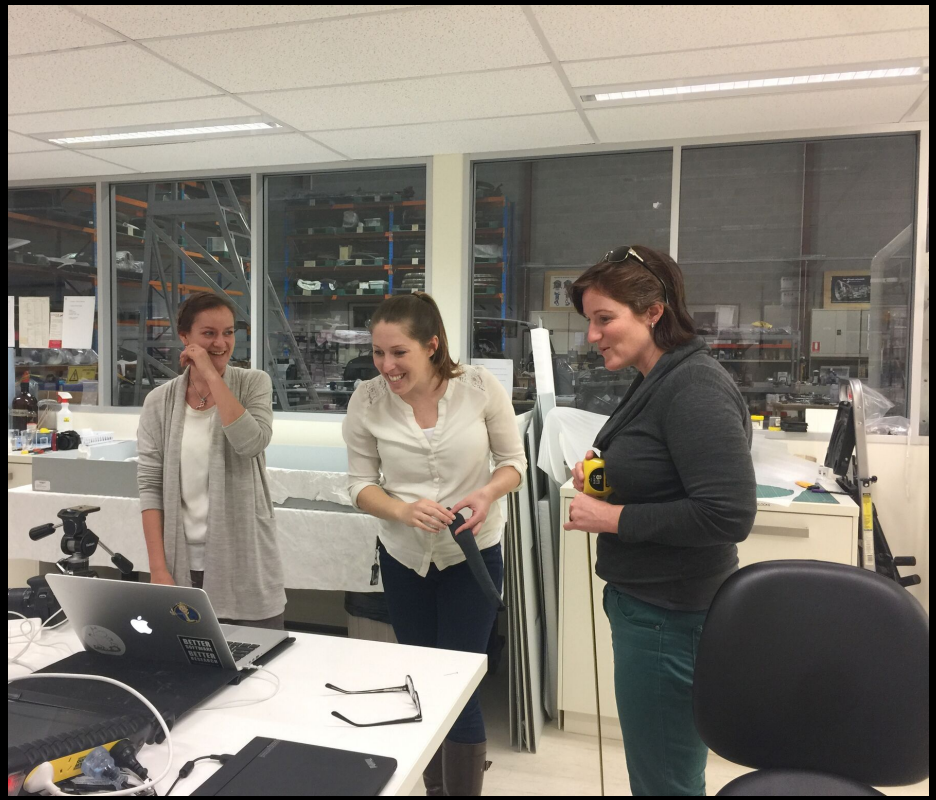

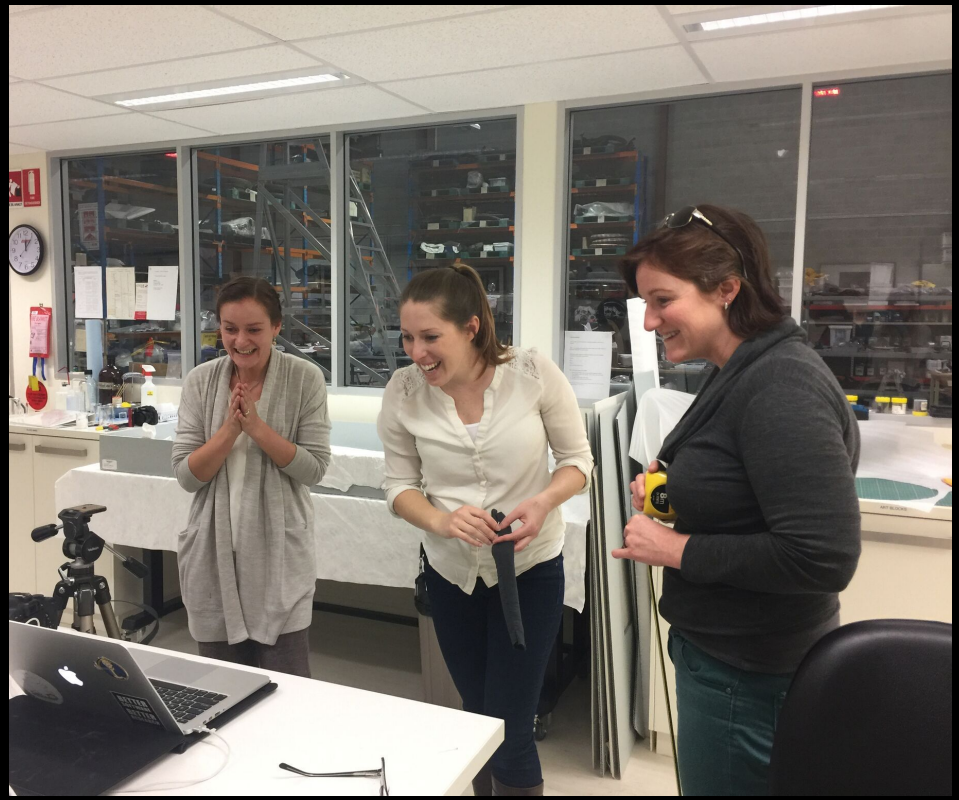

So exciting!

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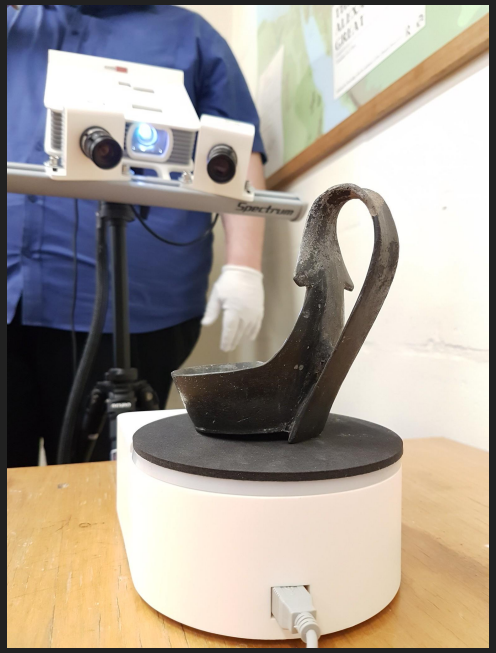
Thanks to Dr Terhi Nurmikko-Fuller of the Centre for Digital Humanities Research, Australian National University, for producing this interactive.

On display in the gallery!

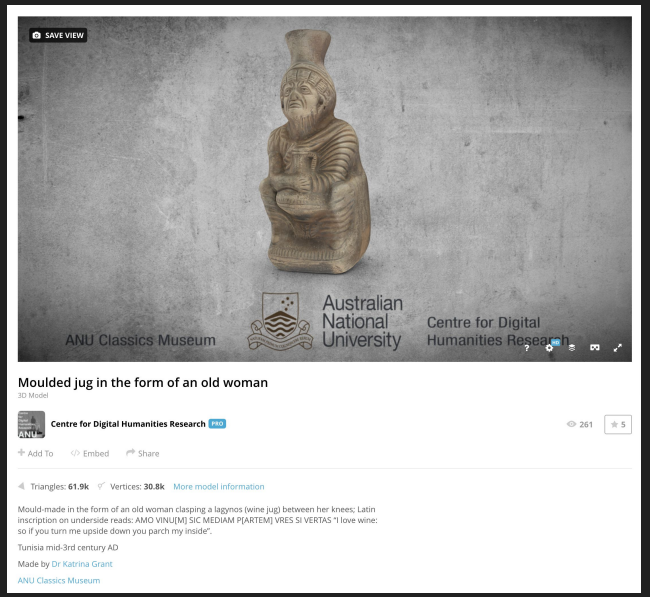
Classics Museum collection at the Australian National University



ANU PhD and Masters students Renee Dixson and Nathen Fair scanning Etruscan objects

Drinking bowl - scanned using an SLR and a commercial lightbox with remote controlled turntable

Scanning objects from the ANU Classics collection with Dan Pett



https://sketchfab.com/3d-models/moulded-jug-in-the-form-of-an-old-woman-948444ee96d5400ebd31355100534a9f

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Prof Shirley Leitch learning photogrammetry. R - the scan of the pig rattle she made

Things to aim for: Nathen Fair (standing) used his new skills in photogrammetry to make a model of an Etruscan Tomb that can be viewed in VR

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Things to read

- https://metodhology.anu.edu.au/index.php/content/3dmodelling/
- https://sketchfab.com/blogs/community/how-the-cdhr-digitizes-australias-national-collections/.
- https://sketchfab.com/CDHR_ANU/models
- https://sketchfab.com/blogs/community/how-to-set-up-a-successful-photogrammetry-project/
- https://www.britishartstudies.ac.uk/index/article-index/virtual-reproduction/article-category/conversation-piece
- https://www.taylorfrancis.com/books/e/9780429505188/chapters/10.4324/9780429505188-28

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Thank you to:

Dr Jonathan Taylor, Assistant Keeper, British Museum, for access to tablets and for his support of the project.

Daniel Pett, then ICT Advisor, British Museum, now Head of Digital and IT at the Fitzwilliam Museum, University of Cambridge, UK, for his advice, guidance, heuristics, equipment, processing, publishing, putting us in touch with Thomas Flynn from Sketchfab…

Dr Lily Withycombe, National Museum of Australia, who was the driving force behind making the boab nuts possible.

Jennifer Brian, National Museums of Australia, who allowed me to photograph the boab nuts while she was carrying out the condition check.

ANU Classic Museum for access to collection and trusting us with object handling!

NMA Digital Team for bringing objects from their handling collection