

Academia, Technology, & The GLAM Sector

Working with Spatial Data in Cultural Heritage

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Background: [Guildhall3D](#) by Cradle of English,



This presentation:
bit.ly/GenusHatfieldFlynn3D

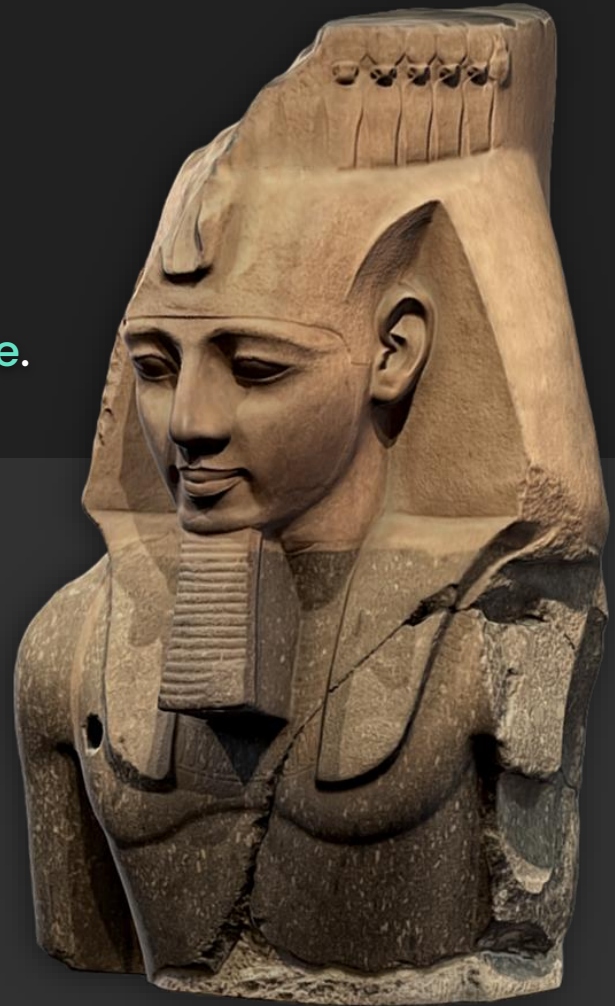
Now

- Editor of the [Spatial Heritage Review](#) | [LI Group](#).
- Co-Chair of [IIIF 3D Community Group](#).
- Visiting Fellow @ [Bournemouth University](#).
- Advisory Board [Rijksmuseum's 2and3D Conference](#).

Prev.

- 3D Digitisation, [British Museum](#).
- Co-founder, [Museum in a Box](#).
- Cultural Heritage Lead, [Sketchfab](#).
- Co-author of [glam3D.org](#).

Colossal Bust Ramesses II - Livestream Tutorial by Thomas Flynn is licensed under Creative Commons Attribution





Gaussian Splatting Exhibitions,
Arts University Bournemouth



The Nerli Chests,
Courtauld Gallery, London



[Guildhall Great Hall](#),
City of London, London

It is **easy** to create 3D data.

It's not so easy to **take good care of it** & make it **accessible**.

Hardware

- Smartphone
- DSLR
- Camera rigs
- Robot arms
- Dedicated scanners



Software

- Photogrammetry
- Laser Scanning / LiDAR
- Gaussian Splatting
- RTI / Photometric Stereo
- Structured light
- CT
- MRI



Metasha...



AliceVision
Meshroom



VisualSFM



Agisoft
PhotoScan



ERDAS
Imagine



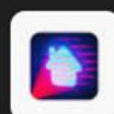
Drone
photogr...



Pixpro



Capturing
Reality



3d
Scanner



Polycam



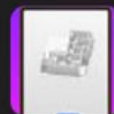
EM3D



Metaroom



itSeez3D



3D Room
Scanner



AR Code
Object



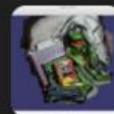
xOne



Zephyr



RealityC...



Regard3D



OpenMVG



MicMac



Photogr...
tool



Mapware,
Inc.



Avica
Cloud



KIR
Eng



Scal
- 3D



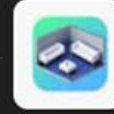
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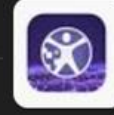
Dot
LiD



Mod
3D



Room
- Int



3Ds



LiD



THOUGHTS FROM TOM

AI, Authenticity, & the Future of 3D Cultural Heritage

Challenges and opportunities for GLAM in a world of AI-generated content.



THOMAS FLYNN
MAY 12, 2025



The rapid advancement of generative AI and the burgeoning development of metaverse platforms present both exciting opportunities and significant challenges for the spatial heritage sector. As tech companies increasingly populate these new digital frontiers with 3D content, a critical question emerges: what is the role and value of authentic, meticulously curated 3D data from our cultural institutions?

This article explores the complexities of integrating genuine cultural assets into environments often dominated by AI-generated lookalikes, examining the



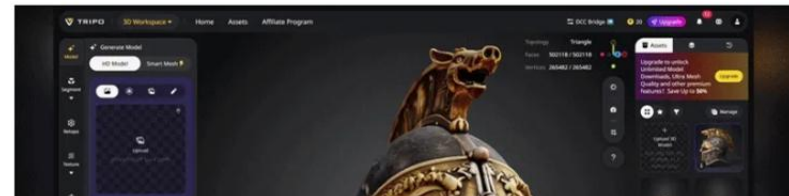
SPONSORED POSTS

Generative 3D with AI: Tripo Studio HD Model (H3.1)

What does generative AI have to do with cultural heritage?



THOMAS FLYNN
MAR 12, 2026



A step back...

An idea...

“A **globally representative library** of **openly licensed, interoperable, well optimised** cultural heritage 3D assets powering **online, mobile first storytelling** experiences that **educate & delight** audiences with **cultural & historical knowledge**, all underpinned by **interlinked archives** of **high quality datasets** **sustainably stored** for future generations.”

Engaging & delightful 3D experiences for audiences.

↑ **powering** ↑

Accessible libraries of open, licensed, & interoperable 3D data.

↑ ***underpinning*** ↑

Well documented and archived high quality 3D data sets.

Data Exploitation

↑ powering ↑

Data Management

↑ *underpinning* ↑

Data Production



UK Heritage 3D Data at Risk

Developing a Strategy
for Long Term Access & Storage





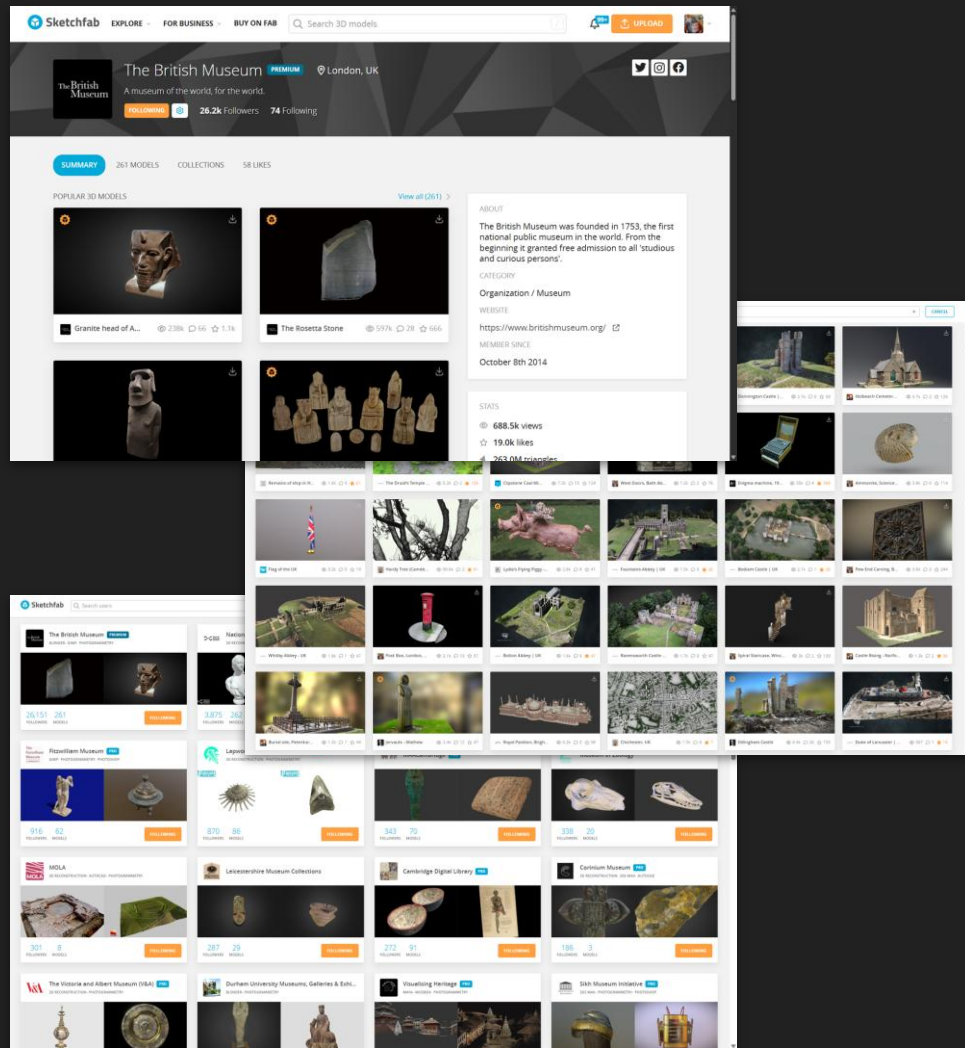
Project Final Report:
bit.ly/H3DARFinalReportDocs

What's the problem?

Many UK heritage organisations rely on commercial platform sketchfab.com for publishing 3D data online, and as a de facto data archive.

- **230+** UK heritage orgs
- **11,000+** 3D models
- **63,000+** followers

[source](#)



Data Exploitation



↑ **powering** ↑

Data Management



↑ ***underpinning*** ↑

Data Production

c.2010s

3D digitisation is becoming more accessible, useable, and affordable. Heritage organisations are looking for ways to engage audiences with their collections.

2011

sketchfab.com launches as the 'youtube for 3D'.

2015

Sketchfab begins to offer **free + discounted** accounts to cultural heritage organisations.

2021

Sketchfab is acquired by interactive entertainment and software company Epic Games.

2023

830 of Epic Games employees are laid off (16% of the workforce). Sketchfab/Epic announce planned changes to services; concern in heritage sector and artist circles ensues.

2025

UK 3D Heritage Data at Risk launched in partnership with Wikimedia UK, funded by the National Lottery Heritage Fund

2026

March: 1,000 Epic Games employees are laid off (roughly 22% of the workforce).

August: Epic sells Sketchfab to production-ready 3D model asset marketplace KitBash.

**Sketchfab has proven that
audiences for interactive 3D
& 3D data exist.**

**It's a good benchmark
for features and usability.**

Mitigating risk to 3D data stored on sketchfab.com

UK cultural heritage (CH) organisations need/want something like Sketchfab that is more aligned with CH practice.

So...

 **How to use Sketchfab (and other platforms) responsibly?**

 **How to **extract / backup** data from Sketchfab?**

 **Where & how to re-publish Data **now**?**

 **What does an ideal **future** situation look like?**



UK 3D Heritage Data at Risk

Developing a Strategy for Long Term Access & Storage

Supported by

- British Museum
- Rochester Cathedral
- Cambridge University
- Bournemouth University
- Oxford University
Internet Institute
- British Library
- Science Museum Group
- Archaeology Data Service
- Oxford University Museum of
Natural History.

Steering Group

Sophia Mirashrafi

Senior Digital Innovation Officer at Historic Environment
Scotland

Abira Hussein

Researcher and Curator specialising in Somali heritage

Melissa Terras

Professor of Digital Cultural Heritage, University of Edinburgh

Sally Al-Haq

Co-lead of The Liberatory Archives, Whose Knowledge?

Evelyn Curl

Data Standards Officer for the Heritage Science Data Service
(HSDS)

Daniel Pett

Archaeologist, Technologist

Richard Palmer

Tech Lead in Digital Media at the Victoria & Albert Museum

Project Activities

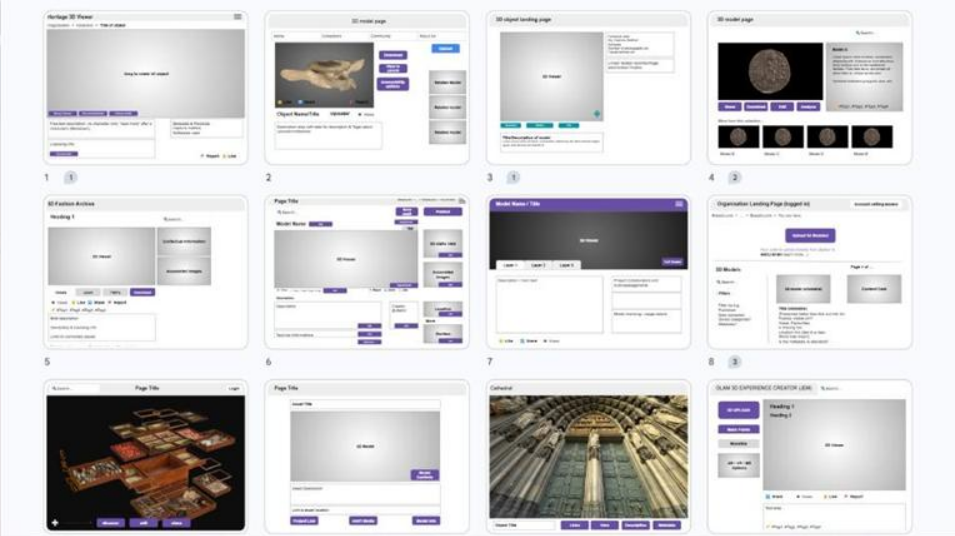
Outreach to **140+** UK cultural heritage Sketchfab users.

Engaged **88** unique UK cultural heritage organisations.

- **52** survey responses.
- **30** hours of stakeholder interviews.
- One 'ask me anything' online workshop.
- One Visual prototyping online workshop.
- One in-person un-conference style event.

7x one-hour long Expert Perspective Interviews.

15 responses 3D Service Vendor 'RFI' Survey.



Some selected survey results...

No. Unique Organisations Surveyed	52
Have no formal 3D preservation policy or are unsure if one exists	71%
Undecided or unaware of the Sketchfab → Fab transition	75%
Report £0, Unknown, or No specific budget for 3D archival storage	71%
Report £0, Unknown, or No specific budget for online display of 3D data	71%
Use no formal metadata schema	56%
Record no paradata at all	48%

Suggested Roadmap: **Short Term**

- Launch a near-term awareness and backup drive.
- Maintain continued, coordinated dialogue with ~~Epic Games~~ KitBash, building on existing IIF 3D Community Group engagement
- Scope and prototype a sketchfab.com data export tool.
- Maintain and expand the community established by the H3DAR project.

Suggested Roadmap: **Medium Term**

- **Policy, standards, and capacity workstreams:**
 - Commission a consolidated standards review, produce practical guidance.
 - Fund a dedicated capacity training.
 - Rights, ethics, data-sovereignty, and data security..
 - Environmental sustainability.
- **Making better use of existing infrastructure:**
 - Run a dedicated adoption and outreach campaign for existing expert infrastructure (ADS, HSDS, RICHeS, etc.)

Suggested Roadmap: Long Term

- **Building new infrastructure**
 - Scope and prototype a working alternative to sketchfab.com for UK cultural heritage 3D data.
- **Extending reach beyond the sector**
 - Develop and strengthen links with non-cultural-heritage sectors.

360° › Gaussian Splats

360°



Gaussian Splatting



Project ETERNAL

A global initiative launched by **Antigravity** in partnership with **Insta360** and **CyArk**, using drone-powered 360-degree imaging and AI-driven 3D Gaussian Splatting to transform physical locations into immersive, explorable 3D digital archives....

- [Announcing Project ETERNAL](#)
- [Project Eternal: A Wrap-Up](#)



Home / Blog / Enterprise / Project Eternal: A Wrap-Up

Enterprise

Project Eternal: A Wrap-Up of Insta360's 3DGS Initiative

Insta360 Last updated on Aug 6, 2026





[Announcing Project ETERNAL with
Antigravity, Insta360, Splatika, & CyArk.](#)



International Image Interoperability Framework (IIIF) 3D

iiif.io/community/groups/3d

The IIF Consortium & Community

- International Image Interoperability Framework (triple-eye-eff).
- iiif.io.
- Consortium formed in 2015 by 11 institutions, now comprises 69 members (iiif.io/community/consortium).
- Goals:
 - Provide **rich** access to digitised data.
 - Define & maintain IIF application programming interfaces (APIs).
 - Developing, cultivating, and documenting related viewing technologies.
- A practical application of FAIR (Findability, Accessibility, Interoperability, and Reusability) principles.

Combining & Re-Combining

 demos.biblissima.fr

Manuscripts @
Bibliothèque Virtuelle des
Manuscrits Médiévaux

Illustrations @
Bibliothèque Nationale de France

Both institutions make their collections
openly available via IIF.



The Aspiration



3D Model



Metadata



Paradata



Sound



Text

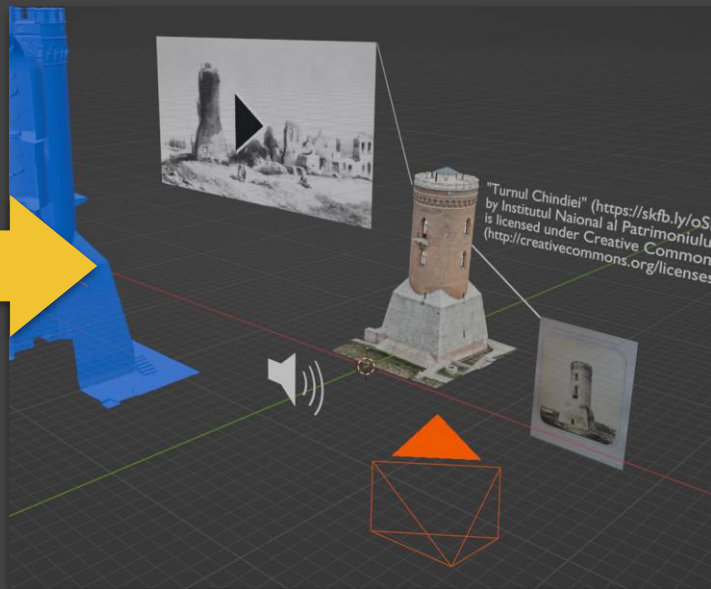
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Online Data
(Yours and other people's)



IIIF Manifest

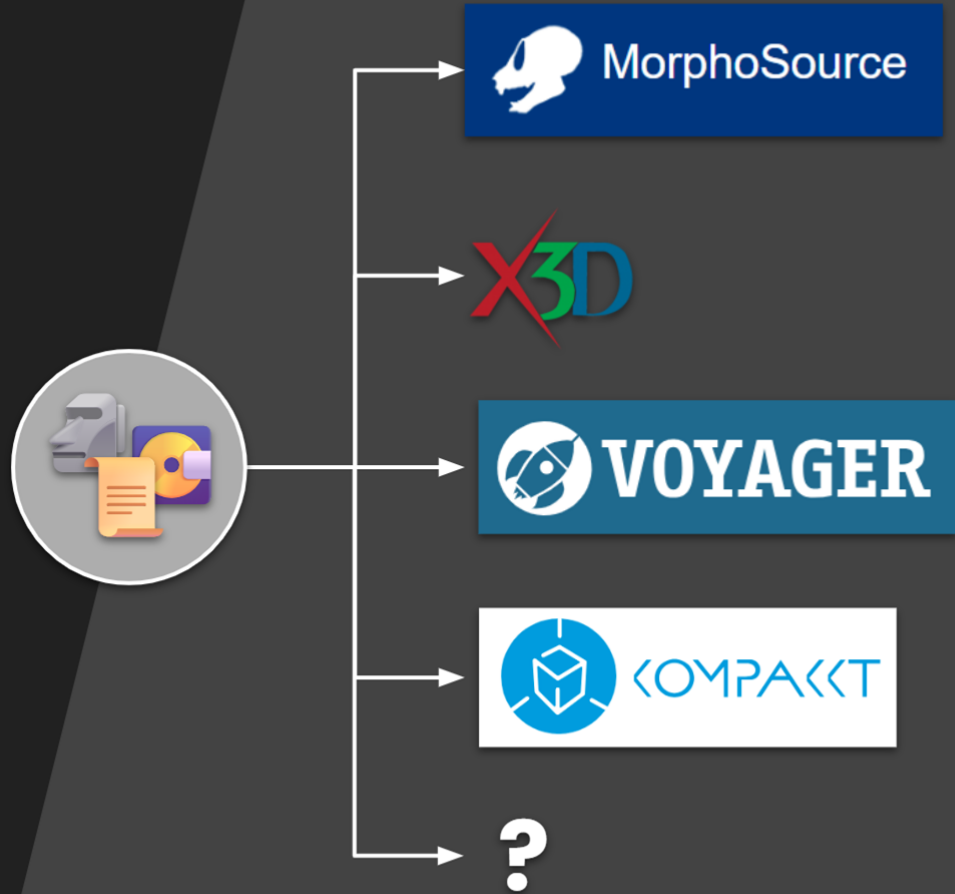


3D Scene in a web browser

Media referenced from multiple online repositories, *annotated* into the scene, renderable in multiple viewers.

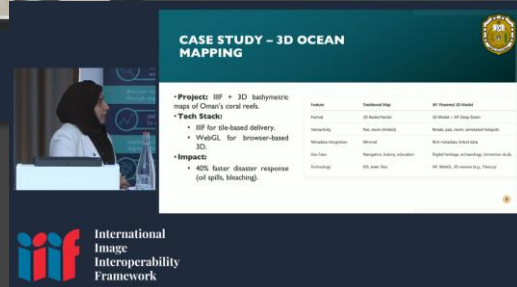
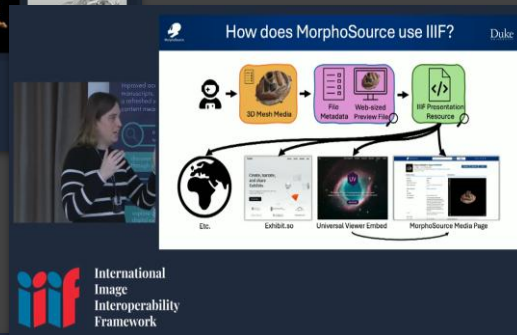
Same Content, Multiple Viewers

- [Smithsonian Voyager](#)
- [X3D Viewer](#)
- [Kompakkt 3D Viewer](#)
- [Morphosource Aleph](#)
- ...



IIIF Conference, June 2025

- Initial reveal of 3D spec.
 - IIIF v4.0 [video](#)
 - Specification *update* ~Jan 2026.
- 3D Demos & Workshops.
 - Morphosource [video](#) | [slides](#)
 - Leeds Archives [video](#)
 - DaSCH [video](#) | [slides](#)
 - Anaverse [video](#)
 - ARCHiOx [video](#)
 - Sultan Qaboos University [video](#)
- Full [video playlist](#).



IIIF Conference, June 2026

- 00:23:50: Movies to museums: Applying learnings from 3D entertainment technology to cultural heritage, Sebastian Siclait (The J. Paul Getty Trust)
- 00:21:43: Beyond Interoperability: Integrating IIIF with 3D Semantics and Generative AI for Multisensory Heritage Exploration, Yeeun Lee and Jongwook Lee (Korea National University of Heritage)

Join the fun! 🤗

iiif.io/community/groups/3d

- Share your 3D work.
- Build with & test the WIP specification.
- Test existing manifest & viewers.
- File formats, licensing, features, etc.



Thanks for listening!

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DigitalHeritageConsulting@gmail.com

Background: [Guildhall3D](#) by Cradle of English,