

2018

ALEXANDER WALMSLEY

3D visualisation and cartography
for heritage, archaeology, and
museums.

INTRODUCTION

I am a 3D environmental artist and cartographer in the fields of heritage, archaeology and museums. I work across a variety of media, including image, web, and real time engines, in order to develop new ways of visualising and studying the past.

ABOUT

I grew up in Oxford, UK. After an undergraduate degree in Archaeology and Anthropology (University of Cambridge, UK), I spent two years working as an archaeologist on commercial and research projects before undertaking a Masters degree in Prehistoric Archaeology (University of Geneva, Switzerland).

I am currently living in Hamburg, Germany.



CONTACT

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Languages : English, French, German

3D VISUALISATION

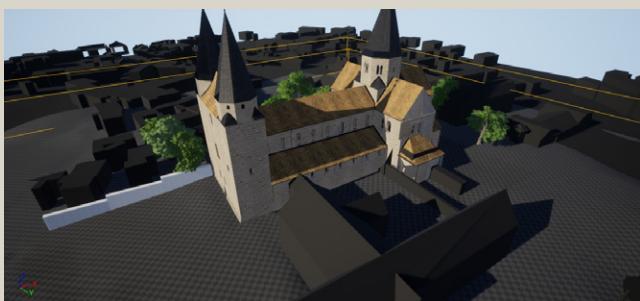
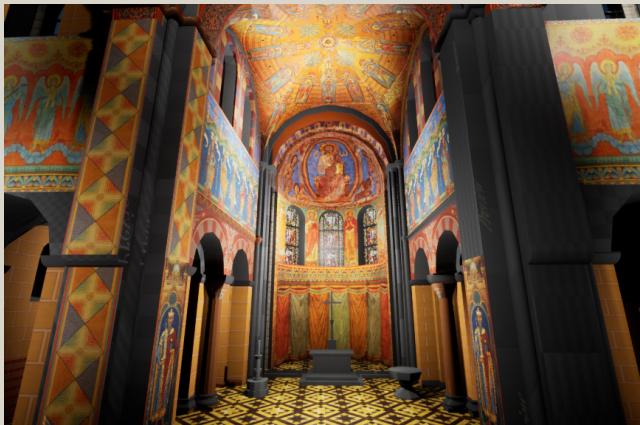
I CREATE ACCURATE AND APPEALING 3D RECONSTRUCTIONS AND VISUALISATIONS OF HISTORICAL AND ARCHAEOLOGICAL SUBJECTS. THESE MODELS CAN BE INTEGRATED IN REAL TIME ENGINES TO CREATE FULLY IMMERSIVE WORLDS.

01

Königslütter Kaiserdom (Work in Progress)

The Kaiserdom in Königslütter, built in the 12th century by Kaiser Lothar III, is one of the most impressive buildings of the romanesque style in northern Germany. This project, in coordination with the HafenCity Universität in Hamburg, aims at creating a virtual reality experience for users to explore the building's history, its interior and the surrounding environment.

The Kaiserdom had been previously laser-scanned and modelled by students at the HCU as part of an undergraduate project. My role is to optimise the geometry and UV layout of the model, as well as the creation of shaders for integration within Unreal Engine 4.





02

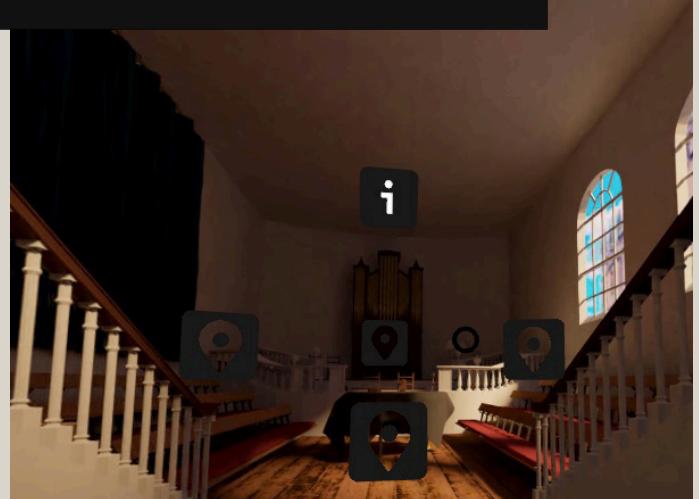


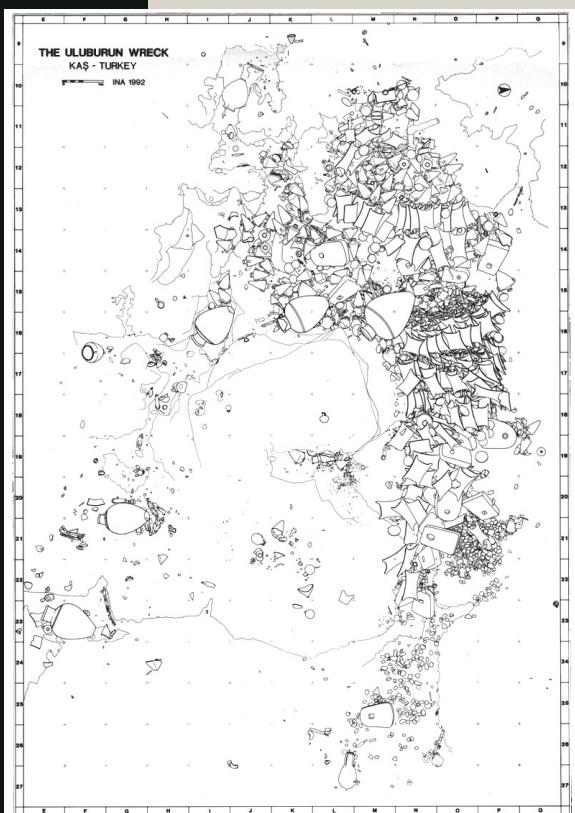
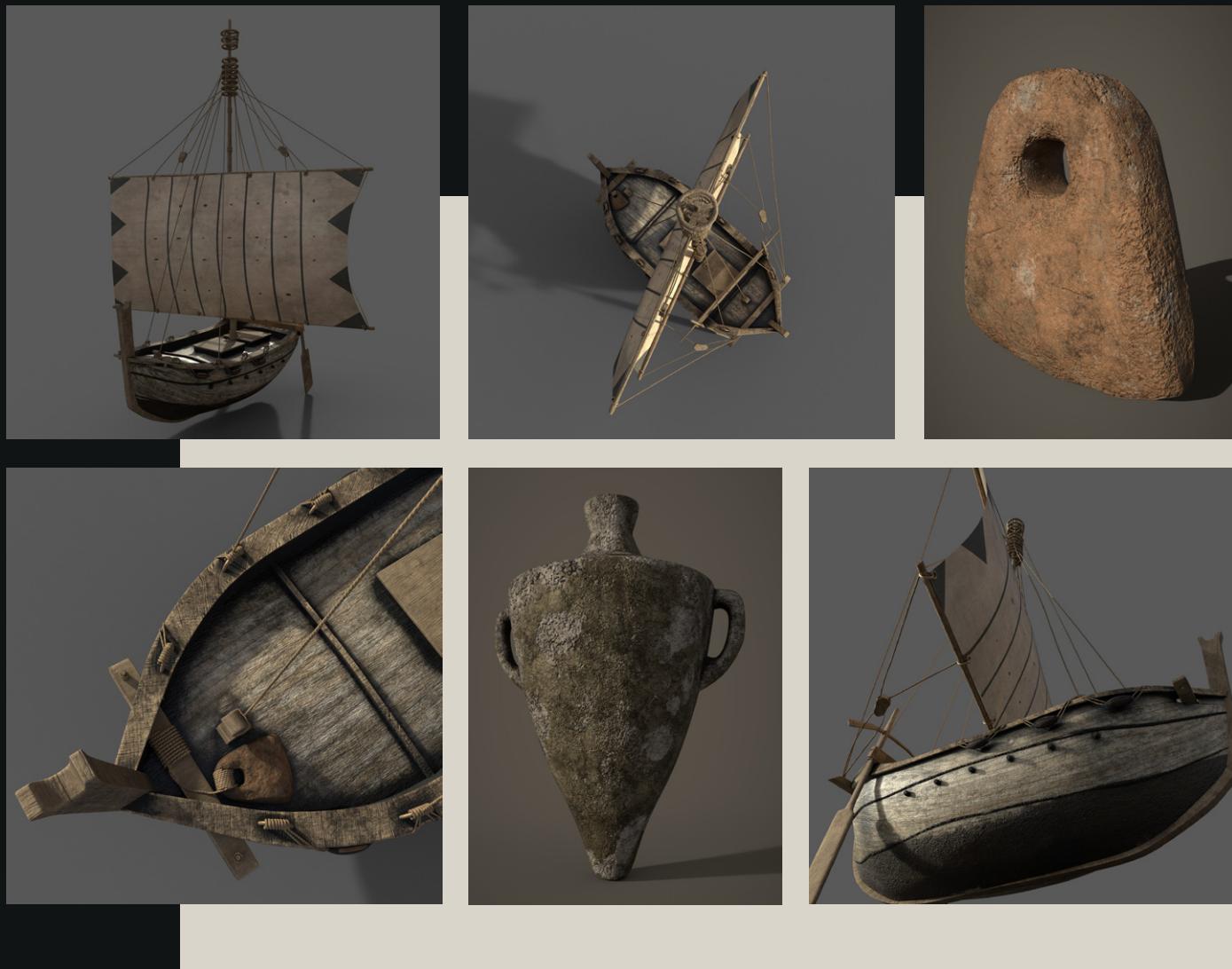
The Holywell Music Room, Oxford, and Holywell VR

The Holywell Music Room is located in Oxford, UK, and is one of Europe's earliest purpose-built concert halls (built in 1748).

All the assets for this scene were modelled and textured in Blender. The final images were rendered with the cycles render engine. The VR app was built using the A-Frame framework, ThreeJS, and the WebVR Javascript API. The app is built to run in a web browser or with a mobile VR headset.

HOLYWELL VR 





03

The Wreck of Uluburun

The Uluburun Shipwreck, off the southern coast of Turkey, is one of the best-preserved maritime archaeological sites of the Bronze Age. Sunk around 1400 BC, the ship was carrying a heavy cargo of goods between Greece and the Levant.

The site was excavated by Institute of Nautical Archaeology, under the supervision of Dr. Cemal Pulak, between 1984 ad 1994. The plans and articles produced subsequently provided the data on which I have based these models.

For this project, I wanted to create a series of high Level Of Detail assets that could be used in film or CGI production. All assets for this scene were modelled and UV-unwrapped in Autodesk Maya. I procedurally created 4K textures in Substance Designer and painted them onto the models using Substance Painter. These images were rendered using iRay.

04



Concept art on which my scene is based, drawn by Gregory Smith.

Feudal Japan - Real Time Game Environment

This project was conceived as my entry to a CGI art competition hosted by the online platform artstation.com. The competition invites artists to create a fully-realised 3D environment that is able to run in a real-time game engine such as Unreal Engine 4 or Unity 5.

For this project, I used a piece of concept art drawn by a concept artist in order to inform my final environment design. The historical setting of my environment is Sengoku period Japan (1467 - 1600).

All assets in these screenshots were modelled and unwrapped in Autodesk Maya. The textures were created and applied in Substance Painter, and the trees were produced using SpeedTree. All were rendered in real-time in Unreal Engine 4.

A fly-through video of the environment may be found at <https://vimeo.com/303972008>. I detailed my progress throughout the competition in a blog, which can be read at <https://www.artstation.com/contests/feudal-japan/challenges/51/submissions/34856>.



CARTOGRAPHY

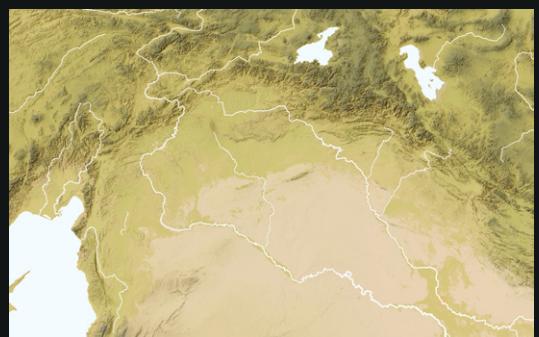
I PRODUCE STATIC AND INTERACTIVE MAPS FOR USE IN PRINT OR ONLINE, AS ILLUSTRATIONS TO ACCOMPANY OTHER MEDIA, OR AS REFERENCE DOCUMENTS.

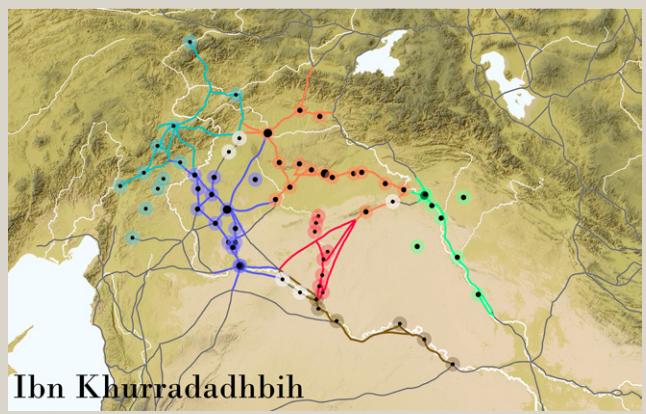
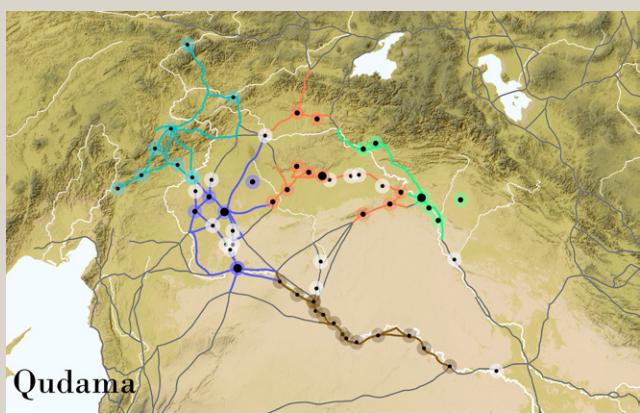
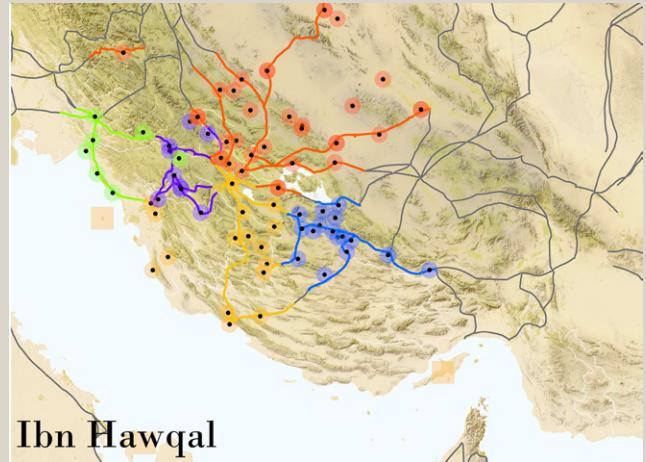
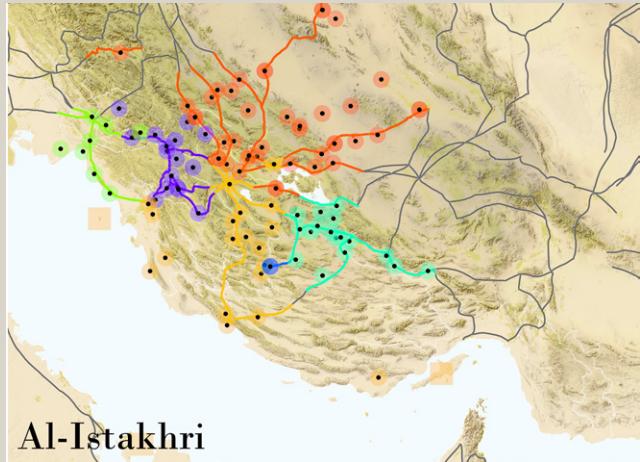
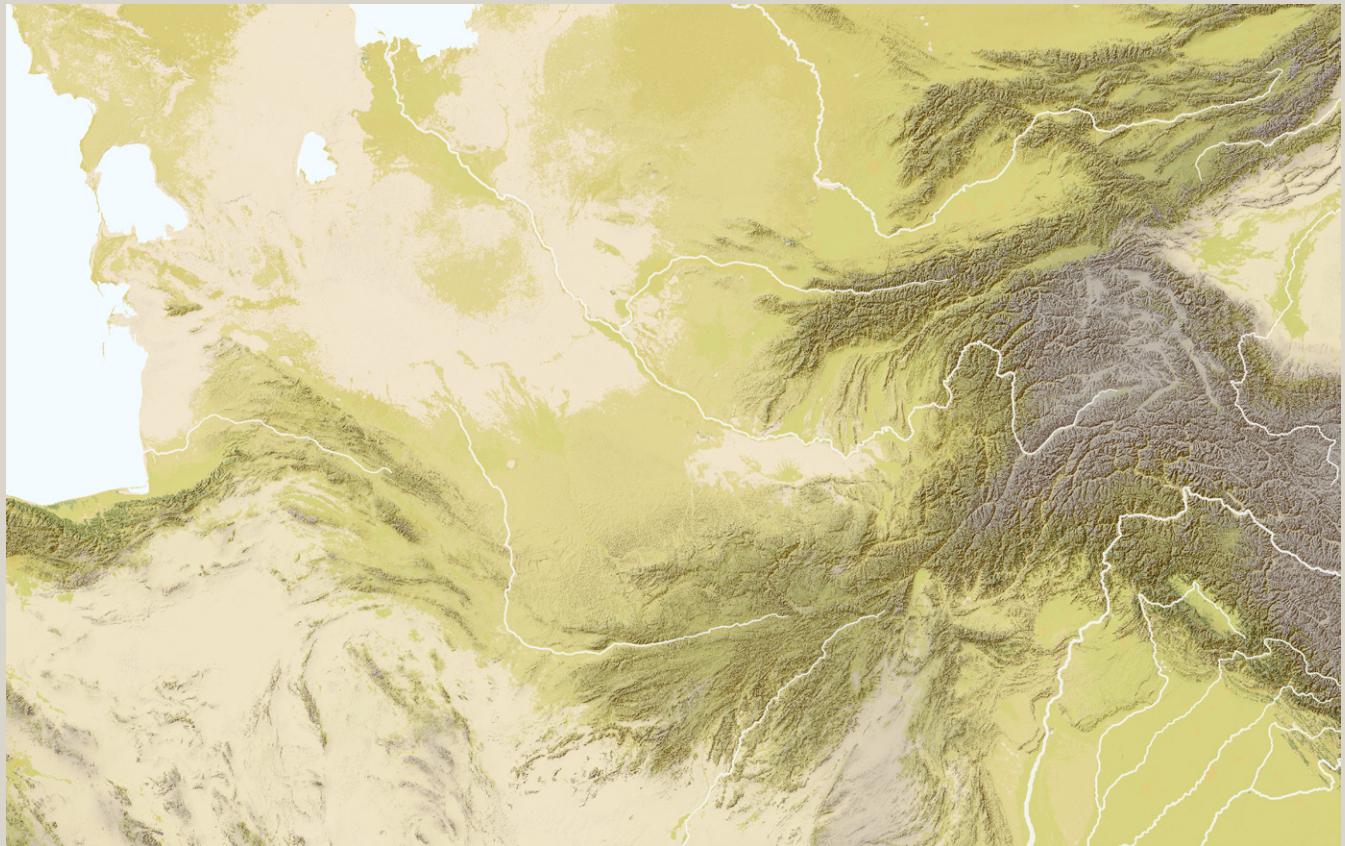
01

The Early Islamic Empire at Work map series (Work in Progress)

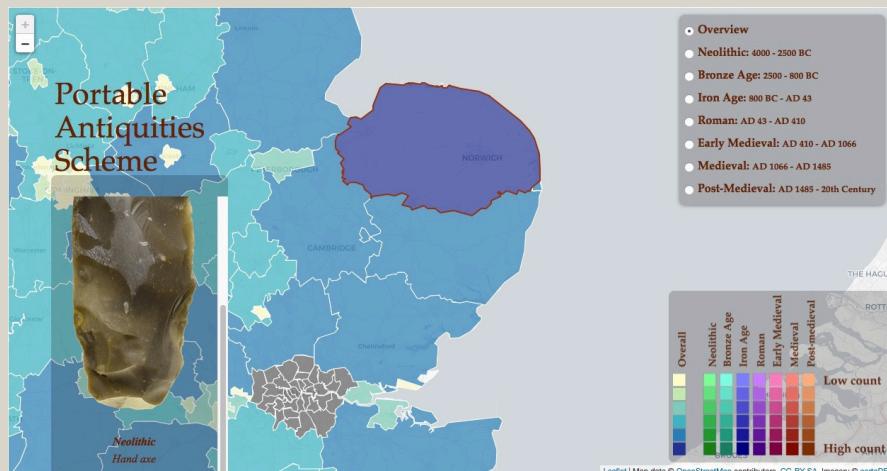
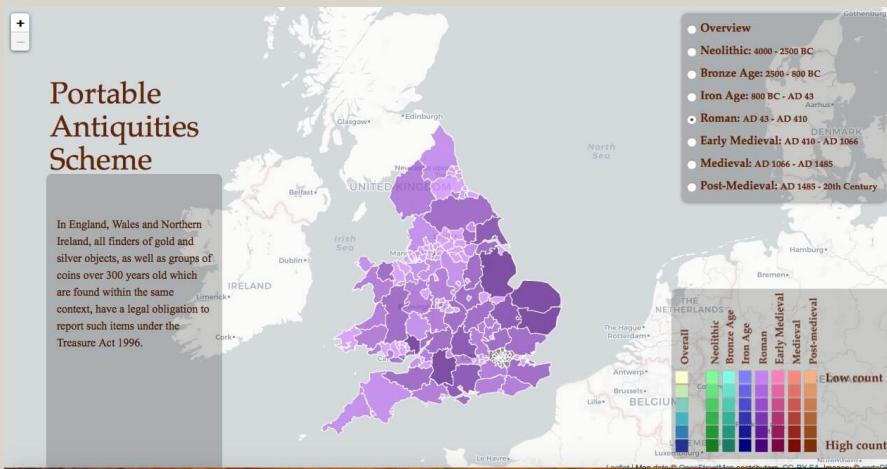
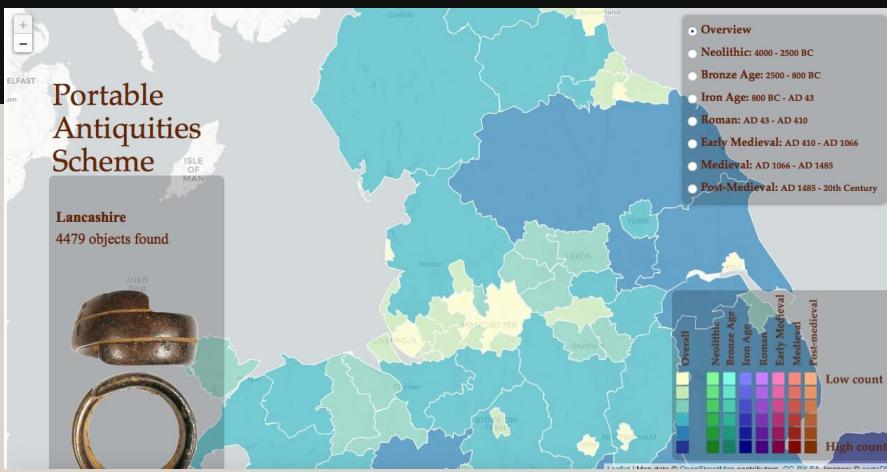
In my position at the University of Hamburg, I work with the ERC research project "The Early Islamic Empire at Work". This project has focused, over the past four years, on the economic and political workings of the early Islamic empire, particularly through the eyes of different Islamic geographers who were active at the time. My role is to produce a series of printed and digital maps to illustrate the results of this research.

The first four maps shown here are some of the base maps onto which data will be projected. The next four maps (see bottom of page 9) are some examples of the data visualisation stage: each point on the map represents a site identified in a particular geographer's text; the colours represent the regions ascribed to each site by the geographer in question.





02



Portable Antiquities Scheme web map

This is a web browser-based map allowing users to view data from the Portable Antiquities Scheme, a UK government project to record small artefact finds by members of the public.

For this map, I used QGIS to manipulate and query the data, then export it to GeoJSON for use with Leaflet, a javascript library for building tilable web maps.

Data: Portable Antiquities Scheme, UK government open data portal (data.gov.uk)

Tools: HTML, CSS, QGIS, Javascript, Leaflet



03

The Past and the Future of Nok

This is a scroll-story with animated maps to illustrate an article about the illegal trade of Nok antiquities from central Nigeria. For this map, I tried to demonstrate three different ways of including animated maps in an online article. The first of these is a slideshow of static maps using the Natural Earth dataset, the second a globe with animated lines showing the direction of travel of the Nok antiquities, and the third a Leaflet-powered web map with popups.

Data: Natural Earth, UNESCO

Tools: HTML, CSS, QGIS, Javascript, Leaflet

undertaken by Bernard Fagg in the 1950s. By the 1980s, however, there had been a surge in the illegal export of these figurines, which peaked in the 1990s.

A report on the subject was made in the 1990s and based, in its own words, "on second-hand expatriate gossip in Lagos". The report found that at the height of the looting, up to 10 terracottas were being excavated each day, adding up to some 3000 figurines total per year. The intensification of police efforts whittled the number of main traders down to just two by 1995, though both of these appeared to have employed around 1000 diggers each. Far from being a haphazard free-for-all operation, the industry displayed a high degree of organization. Its methods of evading authorities, however, remained surprisingly simple. Instead of applying for archaeological

least two dealers who have in-depth knowledge of their respective markets. A good price for a Nok terracotta sold by a local dealer in the 1990s seems to have been in the region of 35,000 Nigerian naira (around \$1,600), already an inflation of around 35 times that which was paid by the dealer to the digger. This in part reflects the level of risk shouldered by actors at this link in the chain. In order to export such objects, loopholes must be found or fake permits acquired. In another case, Subhash Kapoor, a dealer accused of looting artefacts from temples in southern India, achieved this by simply forging false signatures on paper with fake letterheads. He is currently on trial in Chennai.

and styles found in African art into their own creations.

Following this were the landmark sales that form the folkloric heritage of the primitive arts market. The 1966 sale of the collection of Helena Rubenstein, a cosmetics mogul with a penchant for the arts of Sudanic cultures, was the first time African wooden sculpture attained 5-figure price-tags. The Hubert Goldet sale of 2001 was a major step up in terms of scale, with a substantial collection of 600 objects fetching \$11.3 million.

In recent years, it has been the sale in successive installments of the Pierre and Claude Vérité collection that has caused the primitive art world repeatedly reevaluate itself. When this was first brought to market in 2006, the 514 lots brought in some \$55 million. Of

Christie's:
Video: Highlights from...

RESUME

Employment

2018 - present

Research Associate / Cartographer at the University of Hamburg

Responsible for the production of maps for print and online use for the research project "The Early Islamic Empire at Work"

2018 - present

Freelance in cartography and 3D visualisation

Clients include the HafenCity Universität (Hamburg), the University of Geneva, and Stremke Archaeology (Bremen).

2016

Field Archaeologist at Museum of London Archaeology

Responsible for the excavation, drawing, and recording of features on archaeological sites in London.

2014 - 2015

Field Archaeologist at University College London Qatar

Responsible for the excavation, drawing, and recording of features at the site of Meroe, Sudan.

Education

2016 - 2018

University of Geneva, Switzerland

MSc in Prehistoric Archaeology
Excellence Master Fellowship

2011 - 2014

University of Cambridge, UK

BA in Archaeology and Anthropology

Other

2014 - 2015

British Institute in Eastern Africa, Kenya

Graduate Attachment Scheme

SKILLS

GIS / CARTOGRAPHY QGIS, ARCGIS, LEAFLET,
OPEN STREET MAP, CARTODB, TILEMILL

3D MAYA, BLENDER,
SUBSTANCE DESIGNER
& PAINTER, SPEEDTREE

PHOTOGRAMMETRY AGISOFT PHOTOSCAN

REAL TIME UNREAL ENGINE 4,
A-FRAME

**SVG AND IMAGE
MANIPULATION** ADOBE ILLUSTRATOR,
ADOBE PHOTOSHOP,
INKSCAPE, GIMP

PROGRAMMING HTML, CSS,
JAVASCRIPT, JQUERY,
REACT



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