S25 Public archaeology and the use of digital platforms

Ingvild Solberg Andreassen

The past decade or so has seen a great increase the in digitalization of archaeological materials. More data than ever before is being collected in the field. Archaeologists are online while excavating, blogging and tweeting, and all projects now have a Facebook page. For a while, accessibility has been a buzzword within the archaeological community. But what happens to all the digital efforts - all the databases, the Facebook pages, blogs and so on? How is it picked up, how is it received and perceived by the public? This session is particularly concerned with deep oceans of digital data and technology as point of departure for exploring learning, understanding and knowledge building in archaeology. How is data picked up and used by different public groups, why, and under what circumstances? How is data and technology used by institutions to create dialogues with the public, if at all? How is this problematized within the research community? Are data and portals customized with the public's interest in mind? What about the potential of technology in bridging the gaps between excavation and museum, excavation and school, and excavation and the private sphere? Is this explored? If yes - how, if not - why not? Have you done an interesting project using social media, GIS data or database information with a group of students, with a school, or with a local community? Come and tell us about it! We are interested in harvested experience from the practical side of things as well as theoretical reflections over the connections between archaeology, digital data, the public and society. We welcome contributions presenting and discussing outreach projects, public archaeology projects and theoretical contributions concerned with learning, mediation and public dialogue. Keywords for this session are: social media, learning, dialogue, public archaeology, data collection

S25-01 Co-designing digital community archaeologies: Experiences from the re-reading the British Memorial Project

Gareth Beale, Nicole Beale

The Re-Reading the British Memorial Project began as a small scale documentation project which aimed to share digital imaging expertise with community groups studying burial spaces. In response to the requirements of community groups and with their collaboration the project has now expanded to support community led research at every stage of the data lifecycle from creation to re-use. The project has also grown to incorporate an increasingly broad range of stakeholders including national organisations and university research clusters as well as community groups and volunteers.

This presentation will discuss some of the practical issues which arise out of the collaborative development of methodologies for digital archaeology and will explore the challenges and opportunities involved in moving from being a local project based on personal relationships to a national project working remotely with multiple partners. We will critically assess different methodological directions which have been trialled by the project and will describe our current strategies for community engagement and collaboration.

S25-02 Using Google Earth applications to enhance public engagement with cultural heritage: An evaluation of Seeing Beneath Stonehenge

Kate Welham, Lawrence Shaw, Mark Dover, Harry Manley, Mike Parker Pearson

This paper discusses the nature of public engagement with Google Earth based heritage applications, and considers whether the full potential of this media has yet been realised. It focuses on an evaluation of Seeing Beneath Stonehenge (https://microsites.bournemouth.ac.uk/seeing-beneath- stonehenge/), a free to use, Google Earth based application that was created from the wide variety of spatial data collated as part of the Stonehenge Riverside Project. The work was funded by Google, and aimed at creating a

public platform where users could travel around the Stonehenge landscape examining a broad range of research results in-situ. Trench locations, findings and excavation images were included, along with broader landscape studies such as geophysical surveys and narrated tours of key monuments.

We discuss the release, uptake and user feedback from Seeing Beneath Stonehenge. Web statistics are used to examine the use of social media in driving downloads, issues such as initial peak use and plateau, and the geographic distribution of users are considered. In particular we present the results of an online questionnaire that was aimed at examining how the application might have stimulated additional interest in the archaeology of Stonehenge and its wider landscape. Results were obtained from over 100 users, and the majority gave an overwhelming positive reaction to the application. Over 80% stated they were now more likely to visit the monument. We discuss the results, including 'experience limiting' factors such as technological familiarity. Finally we consider why Google Earth applications are yet to be fully utilised within archaeology, and their potential to appeal to a public with an insatiable demand for engaging and informative content.

S25-03 Rekrei: A public platform for digitally preserving lost heritage
Matthew Luke Vincent, Chance Coughenour, Fabio Remondino, Mariano Flores Gutierrez, Victor Manuel Lopez-Menchero Bendicho, Dieter Fritsch

Rekrei (rekrei.org), formerly Project Mosul, is one of those projects that grows out of a conversation between two friends. The co-founders, Matthew Vincent and Chance Coughenour, were discussing the destruction of heritage in the Middle East by extremist groups such as the self-proclaimed Islamic State when Coughenour suggested that they could begin to crowd-source images and photogrammetrically create digital reconstructions of the heritage that was being systematically destroyed. A week later, Rekrei was born. Neither ever imagined that it would get the public's attention, but such a project provides a very real and tangible response to the senseless loss of humanity's past. 6 months later, Project Mosul has continued to grow, shifting from a single focus in norther Iraq, to a global focus on lost heritage everywhere. The co-founders are exploring ways they can continue to build tools that help identify monuments in danger, areas that should be prioritised for scanning and preservation, and ways they can continue to connect the public with tangible means of preserving the heritage. This paper explores some of these new topics, dealing with authenticity of 3D reconstructions, while also at the same time looking at public, crowd-sourcing projects and the challenges that they present when you combine a group of non-experts and high-profile destructions. Future work is looking at how this platform can be applied towards risk assessment and management, as well as improving the available tools to empower the public to engage in such reconstruction efforts for the preservation and recovery of lost heritage.

S25-04 Photomodeling and webmappingn on archeological site of Carthage (Tunisia) and data collection in the museum of Bardo (Tunisia)
Meriem Zammel

In the context of the project Hologramme: "Harmonize the opportunities related to new guidelines for the management of archaeological Mediterranean resources and development of a network of experiences" between Italy and Tunisia, a multidisciplinary team formed of archeologists, architects, computer scientists worked together in order to showcase Tunisian and Sicilian Heritage by using new technologies. The aim of this paper is to present our contribution in this project by teaching digital archeology at Tourath association, by Photo modeling objects and statues in site of Carthage and Museum of Bardo, and preparing social media to public in order to help him to understand the particularity of cultural heritage in this

area and history, through 3D modeling of monuments and videos. Those objects are witnesses of the past. The sponsor of this project for Tunisia is the cultural heritage agency (AMVPPC) which has chosen the society NGI (Maghreb) for the webmapping. Thereby, interactive maps using web mapping, 3D models of monuments and image based modeling of objects obtained from Autodesk 123 catch were made in order to show the historical stratification of Tunisia. Automatic image based modeling constitute an accurate and low cost technique. Multiple data sources (Photos, text, 3D model, Photo model…) are used and integrated in a web system in order to show to the visitor a way of understanding and documenting the past.

S25-05 Visualizing original sea level of Stone Age sites on location by means of mobile augmented reality

Gunnar Liestøl, Birgitte Bjørkli, Espen Uleberg

When understanding and informing about the localization of Stone Age sites along the rugged coast of Norway it is always pertinent to include information about the sea level at the time the site was in use. This is important for both archaeological surveying and excavation, as well as mediation to the public at large. When one finds oneself on a Stone Age site a kilometer inland in the thick of a dark forest it is not easy to imagine what the place actually looked like six thousand years earlier when the site was in use by Neolitihic Man in Norway as part of the coastline and exposed to the open sea. How may we take advantage of the current state of the art in location-based media and mobile augmented reality in order to bring dynamic visualizations of the ancient landscape into the hands of both archaeologists and interested visitors? In this paper presentation we report on the development and testing of a situated simulation where the user can move around in a given landscape and view a parallel simulation of the sea level from pre-historic times until present on his or her smartphone or tablet. The application uses an indirect augmented reality approach and sea level/time-period can be altered continuously. When approaching a surveyed and/or excavated site one can also observe its extension and via spatially positioned hypertext links access the online databases for multimodal information about the findings, etc. The prototype runs on iOS and has been tested with a small group of visitors on location. The paper concludes with a discussion of the user evaluation and suggestions for further work.

S25-06 DOMUS: Cyber─archeology and education

Alex da Silva Martire, Tatiana Bina

This presentation is focused on the development and implementation of the project elaborated by the Laboratory for Roman Provincial Archaeology (LARP - University of Sao Paulo) named DOMUS: the first online Brazilian cyber-archaeological application that enables users to navigate in three- dimensional virtual environment that simulates an ancient house during the Roman Empire. It will be presented the application development process starting from its initial conception (based on archaeological remains of Pompeii and Herculaneum), through the complete modeling and texturing in Autodesk Maya software to the creation of real-time interactivity on the Unity engine. We will focus on the implementation of our educational proposal in schools. DOMUS was applied for the very first time at Col├®gio Unidade Jardim (a high school in Sao Paulo). The activity consisted of asking the students (aged from 10 to 12 years) to navigate through the idealized three-dimensional Roman house in order to explore its rooms and objects, and also to perceive inherent subjects belonging to Pompeian domestic art and architecture. The main intended goals of our proposal were: a) enable an otherness experience for students (so they can reflect on the historical use of the house); b) make use of "L'histoire du quotidian" (a much more approachable way to present History to students); c) discuss the technological and historical choices that were made during the development of the application; and d) evaluate the reception of the application. In this manner, it will be

presented the stages involved in the implementation of the activity with students and how our cyber- archaeological application allowed them to establish the link between archaeological remains and their own daily lives through a computer emulation.

S25-07 Democratising the digital: Sustaining community─sourcing platforms for heritage management and conservation by co-creation
Leif Harald Fredheim
While the rise of interactive digital networks and technology has challenged established societal and intellectual authorities, digital heritage often exacerbates perceptions of expertise and entrenched flows of information. This paper will explore one way in which the democratising potential of the digital can be used to empower communities without neutralising professional expertise. As heritage conservators and managers increasingly recognise the role of non-expert contributions to informed decision-making processes, the development of tools for generating and processing consultation data digitally is the logical next step. This paper reflects on lessons learned from developing a web-application for community-sourcing heritage interpretations at the Middle Temple and the ongoing process of co-creating a similar platform with, and for, community archaeological groups affiliated with the Council for British Archaeology (CBA). A common feature of the two platforms is the integration of 'expert' and 'non-expert' interpretations of heritage and the attribution of expert interpretations to identifiable individuals rather than anonymous and omniscient third parties. The development of a community-sourcing platform for the CBA is part of a project investigating the sustainability of community-led approaches to archaeological stewardship, in response to recent cuts to public spending in the UK. Co-creating the platform with potential user-communities is intended to ensure that the platform satisfies user-needs, not merely the needs of professionals and academics, and can be sustained by user-communities. Participation will be facilitated through training events and concerted efforts to raise levels of digital literacy in participating communities.

S25-08 Breaking the mould: Why do we replicate objects of the past?
Michael Ann Bevivino
This paper will discuss some of the preliminary results of the 'Breaking the mould: Ireland's replicas of cultural objects from the historic to the digital' project that is funded by the Irish Research Council. The main goal of this project is to assess the benefits and long-term implications of advanced 3D replication technologies to cultural institutions in Ireland. It will achieve this through a study of the parallels between historic replicas and the current surge in digital replication.
As in many other parts of Europe and the world, Ireland holds a collection of 'historic replicas'(such as plaster casts and marble copies) that were created in the eighteenth, nineteenth and twentieth centuries in order to display a canon of great works of art to museum visitors. These replicas were considered to be prime indicators of good 'taste'; museums often created replica collections to teach visitors what they should know various cultural icons. Today, many cultural bodies are using digital methods to do the very same thing. Many of Ireland's 'icons' have been digitally recorded (using laser scanning or photography-based methods), both for conservation and dissemination purposes. The use of these new technologies is widespread, but perhaps the application of digital data to answer defined research questions is sometimes more difficult to ascertain. This paper will touch on some of the following research questions:
- Why do we replicate objects of the past?
- What are the benefits and challenges of using 3D digital replication techniques?
- How do we most effectively use the available technology?

- Why are we studying particular objects using particular methods?
- Will the proliferation (and democratisation) of digital technologies lead to more interest among visitors or cause fatigue?

S25-P1 WW2 remains as cultural heritage
Evy Berg
In Norway, a country-wide registration of remaining sites from WW2 with special emphasis on the less- known stories has started in 2015. Some of these have left little or no material traces, and it is important to document events taking place during 1940-45. Daily life, economy, but also genocide, slavery and persecution are all important themes in the project. Maps structured according to themes have been produced as part of the project, based on the main systems owned by the Directorate: the sites and monuments register Askeladden, and the public web-page Kulturminnesøk. Analysis of the information registered has been performed, with regard to which themes are more easily found in the official database vs. the public version. The main bulk of WW2 sites remain unregistered in our systems, but more will come in in coming years. Unregistered does not mean unknown, a lot of the military sites are well-known and with organisations on the local level being interested in them. The more esoteric sites are more dependent on living memory and such memories being committed to text. The maps will be expanded as more sites are entered into systems, and then classified. In this project the data collected and registered by members of local communities is of great importance, data which the professional cultural heritage agencies depend on to get good data to select what should be preserved as cultural heritage. The project also uses Internet and social media to communicate in ways the directorate has not done before.

S25-P2 Archives, archaeology, and architecture: A multimedia approach for 3D reconstructions
Lauren Massari
In a few years, the University of Virginia, founded in 1819 by Thomas Jefferson, will be celebrating its bicentennial. One of the University's initiatives for this important event is the Jefferson's University, the Early Life (JUEL) Project (http://juel.iath.virginia.edu/), which is a digital collection of personal and administrative documents dating from the University's founding until the years after the American Civil War, as well as a digital reconstruction portraying Jefferson's original architectural vision and early changes. The main goal of the JUEL Project is to allow users to explore early documents and renderings to gain an understanding of the people, places, and operations that shaped the university we know today. One of the main issues the project aims to bring to light is the role slavery played in the construction and everyday operations of the early university. In the past, the university has downplayed its uncomfortable relationship with slavery. By digitizing early university records and making them searchable, and digitally reconstructing buildings associated with slavery that have long since been torn down, users will be able to delve deeper into the university's hidden past.
The digital reconstruction of Jefferson's University is the result of a collaboration between IATH, the University Office of the Architect, Facilities Management, the University Library, and Rivanna Archaeological Services. The reconstruction is based on architectural documents, written descriptions, historical photographs, historic structure reports, archaeological reports, and the input of local experts (architectural conservators, archaeologists, and historians, to name a few). Original architectural details such as column capitals and crown molding are also being laser scanned, both to use in the digital reconstruction as well as to create a database of details that can be used for education and conservation. The end result will be a 3D model that shows the university in a way that has

not been seen for over a hundred years- both the original Neoclassical buildings that still stand today as well as the countless outbuildings that cropped up to support early university life.

S25-P3 Doha Online Historical Atlas—GIS interactive mapping of space and time in a pearling town
Michal Michalski, Robert Carter, Daniel Eddisford, Richard Fletcher, Colleen Morgan
Since 2012, the Origins of Doha Project (University College London - Qatar) has investigated the foundations and historic growth of Doha, Qatar through archaeology, history, and oral testimony. As part of the digital public outreach for the project, Doha Online Historical Atlas (DOHA), a Historical Geographical Information Science web application has been developed to disseminate the live, multimedia results of Doha's transformation from a pearling town into a modern city.
DOHA was built using Open Source Software and utilises cutting edge web and geospatial technologies. The design allows for the efficient, flexible representation of an interactive timeline with geolocated maps, aerial images, videos, historic records, building recording, and archaeological investigation. This information explored on the web, or on mobile devices that bring the history and archaeology of local places to the user's location.
DOHA provides also users with opportunity to actively participate in development of the content which is crowdsourced using geotagged Wikipedia articles as well as by filling a report on historic event and adding a geolocated media. The popularity of the application will be evaluated using feedback provided through email, social media sharing buttons as well as analytic software for web maps that give insight into user interaction with map.┬á
The poster will showcase the design, architecture and implementation of the application which has been unique in its nature and scope.