European Projects at the ADS

Department of Archaeology Research Forum
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Holly Wright

http://archaeologydataservice.ac.uk
ArchAIDE
Archaeological Automatic Interpretation and Documentation of cEramics

- EU H2020 project under ‘Reflective’ topic
- Nine partners from five countries - ADS only UK partner
- Three-year project: started 1 June 2016
- Total project budget: €2.6 million
- Ten Workpackages
- Coordinator: University of Pisa
ArchAIDE Partners

- Universita di Pisa, Italy
- Consiglio Nazionale delle Richerche (CNR), Pisa, Italy
- Tel Aviv University, Israel
- University of York, UK
- Universitat de Barcelona, Spain
- Universitaet zu Köln, Germany
- Baraka Arqueologos S.L., Spain
- Elements Centro de Gestio I Difusio de Patrimoni Cultural, Spain
- Inera Srl, Italy
Pottery classification is of fundamental importance for the comprehension and dating of the archaeological contexts, and for understanding production, trade flows and social interactions, but requires complex, time consuming skills.

The objective of ArchAIDE is to support the classification and interpretation work of archaeologists with innovative computer-based tools, with features for the semi-automatic description and matching of potsherds over existing ceramic catalogues.

Including the development of:
An as-automated-as-possible procedure to create digital descriptions from print catalogues, which will form a comparative collection

A tool (primarily mobile) supporting recognising and classifying potsherds during excavation and post-ex, with an easy-to-use interface based on algorithms for characterisation, and search and retrieval of visual/geometrical correspondences

An automated procedure to create a potsherd’s ‘identity card’ by transforming the data collected into a formatted electronic document, either on-screen or in print

A web-based, real-time, data visualisation platform

An archive to allow the re-use of the resulting data

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An as-automated-as-possible procedure to create digital descriptions from print catalogues, which will form a comparative collection

- Focus on technologies for the *digitisation of paper catalogues*, or how best to convert paper documents into a digital format, first solving the easier problems (digitisation, OCR, detection of figures), then focusing on the more complex issue, of how to enable the semi-automatic conversion of raster images into a *geometric 2D description* of each ceramic class (based on drawings and profiles). This will then be used to build the comparative collection

- Focus on efficient and robust algorithms and data structure for supporting the *search by similarity* of fragments to support the comparative collection
A tool (primarily mobile) supporting recognising and classifying potsherds during excavation and post-ex, with an easy-to-use interface based on algorithms for characterisation, and search and retrieval of visual/geometrical correspondences.

An automated procedure to create a potsherd’s ‘identity card’ by transforming the data collected into a formatted electronic document, either on-screen or in print.
1. Discovery of a new sherd
2. Production of initial documentation (2D images, drawing, text)
3. Automatic search over the digital catalogue
4. Validation of the Automatic Classification
5. Production of the digital Sherd Description File
A web-based, real-time, data visualisation platform

Visual Computing Lab

Who are we? Where are we going?

The history of the Visual Computing Lab of CNR-ISTI began more than 25 years ago, with the friendship and collaboration of Claudio Montani (formerly CNR-ISTI, now CNR-ISTI Director) and Roberto Scopigno (formerly CNR-CNUCE, now head of the VCLab).

We have initially focused on scientific visualization, then moved to geometry processing, multiresolution representation / visualization, deformable models, 3D digitization, texturing and mesh parameterization.

Currently, our main application domain is Cultural Heritage (that is a rather natural choice since we live in Tuscany), including virtual museums, restoration, documentation and rapid reproduction.

Only a minority of the lab members have permanent positions, most of members' salaries are paid by several research projects (EC, Regional and National funds).

Research activity has been recently organized under three main threads:

News

We have been nominated TWICE for the 2015 DIGITAL HUMANITIES AWARD !!!

Feb 16th, 2016

We need your help, please vote here: DH Awards 2015.

Category 'Best DH Tool or Suite of Tools' ➔ 3DHOP: 3D Heritage Online Presenter

Category 'Best Use of DH for Public Engagement' ➔ Alchimia di Jackson Pollock: Alchemy in 3D.
An archive to allow the re-use of the resulting data
ADS Role

**WP3: Creation of the Application Database**
- Task: Database design
- Task: Incorporation of multi-lingual vocabularies

**WP10: Archiving and Dissemination**
- Task: Data management
- Task: Data archiving
- Task: Dissemination and promotion
NEARCH
New Scenarios for a Community Involved Archaeology

A five-year EU Culture Programme funded project
Total budget of five million Euros (50% funded)
Coordinated by the Institut national de recherches archéologiques preventives (INRAP)

The largest and most ambitious European programme devoted to archaeology in terms of budget, objectives and number of partners in this funding stream

www.nearch.eu

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NEARCH follows on directly from the recently completed Archaeology in Contemporary Europe (ACE) project, which “identified a cultural crisis and a crisis of values and ideas outlined in the EU agenda European Modernity”.

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NEARCH aims to assess the implications of the crisis in the fields of Archaeology and Heritage, and to propose new ways of working and interacting. In particular, the project will also explore the different dimensions of public participation.
A. Archaeology for the community: informing and involving people
   Re-think and develop ways to communicate and mediate archaeology for various audiences.

B. Archaeology and the imaginary: crossroads between science and art
   Explore and enhance the relationships between archaeology and artistic creation, by encouraging collaborations between archaeologists and contemporary artists.

C. Archaeology and knowledge: teaching and sharing information
   Promote new ways of teaching archaeological knowledge and practices to young professionals and sharing archaeological data with various audiences.

D. Archaeology in a changing economy: towards sustainability
   Shape, through the exchange of experiences and comparative studies, a new economic model for a sustainable practice of archaeology and heritage management.

E. European archaeology and the world: dependencies and mutual development
   Highlight the societal component of archaeology, considered as the expression of a wider community rather than a restricted academic domain.
13 core partners, across 10 European countries:

- Institut national de recherches archéologiques preventives (INRAP) - France
- CentQuatre – France
- Universiteit Leiden, Faculteit De Archeologie – Netherlands
- University of Oxford – UK
- Jan Van Eyck Academie – Netherlands
- Instituto de Ciencias de Patrimonio – CSIC – Spain
- Uniwersytet im. Adama Mickiewicza w Poznaniu – Poland
- Culture Lab – Belgium
- University of Gothenburg – Sweden
- Instituto per i beni artistici culturali e naturali dell’Emilia Romagna – Italy
- Deutsches Archäologisches Institut – Germany
- Aristotle University of Thessaloniki – Greece
- Archaeology Data Service - UK
ADS and York involvement in NEARCH:

Archaeology for the community: informing and involving people
  • From 2015-2018, ADS is contributing to the ‘Day of Archaeology’ to provide both technical support and help in expanding involvement across Europe
  • Coordinating with the CDH (and now the DC hub) in the development of a mobile app to allow the public to interact with historic records and resources

Thinking and creating together: artists in residence
  • ADS and members of the department all contributed to working with artist Leyla Cardenas. Her work, inspired by her time with us, will feature in the NEARCH exhibition in Maastricht in February, 2017.

Archaeology and knowledge: teaching and sharing information
  • Provide archaeological contents and data adapted for various audiences, contributing to the production of digital publications on archaeology. Judith Winters is currently working on a publication around the Star Carr pendant that explores the object from various perspectives for different audiences.
El tiempo lo aguanta todo (Time holds it all)
Internet Archaeology is using the popular article on the Star Carr pendant to explore adaptation for various audiences:

- Children and young adults
- Artists
- Digital Archaeology
Advanced Research Infrastructure for Archaeological Dataset Networking in Europe
A proposal to integrate existing archaeological data infrastructures across Europe, so researchers can use the various distributed datasets and new and powerful technologies, to explore new research methodologies.

http://www.ariadne-infrastructure.eu/
• Contribute to the creation of a new community of researchers ready to exploit the contribution of IT, and incorporate it in the body of established methodology.
  • Community Building and Innovation
  • Standards and Interoperability
  • Good Practices and Dissemination

• Enable trans-national access of researchers to data centres, tools and guidance, and the creation of new Web-based services.
• Stimulate new research avenues in the field of archaeology, relying on the comparison, re-use and integration into current research, the outcomes of past and on-going field and laboratory activity.
  • Linking Archaeological Data
  • Data Mining and Natural Language Processing
  • Innovation in Archaeological Research Methodology
• EU FP7 project under the ‘Infrastructures’ theme, including 24 European partners across 16 countries
• Four-year project: started 1 February 2013
• Total project budget: €8,413,780
• Seventeen Workpackages
• Coordinator: PIN Scri - Polo Universitario "Città di Prato” at the University of Florence
• Deputy Coordinator: ADS
Italy: PIN, CNR, AIAC, MIBAC-ICCU
UK: ADS, MDR Partners, USW
Netherlands: DANS, LU
Germany: DAI
Greece: ATHENA-RC, FORTH-ICS
Austria: SRFG, OAW
Ireland: Discovery Programme
Romania: ARHEO

Sweden: SND
Spain: CSIC
Slovenia: ZRC-SAZU
Hungary: MNM-NOK
Cyprus: CYI-STARC
Czech Republic: ARUP-CAS
Bulgaria: NAIM-BAS
France: INRAN

http://portal.ariadne-infrastructure.eu/
Thank you!

http://archaeologydataservice.ac.uk/

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