DARIAH Annual Event 2021: Interfaces

Book of abstracts

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Panel

Multilingual NLP as Interface

David Bamman * [1], Quinn Dombrowski * † [2], Natalia Ermolaev * [3], Andrew Janco * [4], Toma Tasovac * [5], Melanie Walsh * [6], David Lassner * ‡ [7]

[1] UC Berkeley – United States
[2] Stanford University – United States
[3] Princeton University – United States
[4] Haverford College – United States
[5] DARIAH – Germany
[6] Cornell University – United States
[7] TU Berlin – Germany

The extreme focus on modern English in much of the natural language processing (NLP) community has led to a chasm between what is computationally possible for English and, for some languages, the feasibility of using computational methods at all. Even within the sphere of modern English, one
encounters a performance gap when applying state-of-the-art algorithms to literature; models trained on news corpora and Wikipedia lose some efficacy when applied to such different kinds of text (Bamman et al 2019). While they typically lack a graphical user interface, NLP models and packages serve as interfaces to text, enabling scholars to do some things, but not others, depending on how they were created, and the nature and quality of their training data. This panel features three talks by scholars working to create new NLP tools and pedagogical materials that address the needs of humanities scholars who work with languages other than English – in effect, building better interfaces for a wider range of computational scholarship.

New Languages for NLP

New Languages for NLP, a collaboration between DARIAH and cooperating partner institution Princeton University, funded by the National Endowment for the Humanities in the United States, is holding three workshops to instruct teams of humanities scholars in developing or improving NLP models for their research languages. Materials for these workshops will be revised based on participant feedback, and published on DARIAH Campus. The workshop series

*Speaker
†Contact person: qad@stanford.edu
‡Contact person: davidlassner@googlemail.com

includes ten languages, some of which currently have few or no usable resources for computational text analysis: Classical Arabic, Classical Chinese, Kanbun, Kannada, Ottoman Turkish, Quechua, 19th century Russian, Tigrinya, Yiddish, and Yoruba. The first workshop, to be held in June 2021, will focus on the fundamentals of annotating texts based on the kinds of research questions you hope to address with the resulting model. By the time the DARIAH Annual Event is held in September, the teams will have made significant progress on annotation and preparations will be well underway for the second workshop on model training, to be held in January 2022. In this presentation, we will report on the results so far, as well as the challenges and opportunities encountered along the way.

Designing Multilingual Teaching Materials for Cultural Analytics

In early 2021, I released an open-source textbook, Introduction to Cultural Analytics & Python, which

introduces Python programming to students and scholars who are interested in studying cultural materials like books, screenplays, and newspapers. Though the textbook originally focused on English language texts and U.S. literature and history, I noticed that it was being used and read by scholars from around the world who were interested in studying other languages and national contexts. This reception prompted me to think about how to redesign the textbook to better support multilingual cultural analytics research, a task that I have begun in collaboration with Quinn Dombrowski. In this paper, I will discuss some of the challenges and insights gleaned from our work so far. Most broadly, I will argue that designing multilingual teaching materials for cultural analytics demands collaboration between different scholars in order to overcome gaps in domain knowledge about specific languages.

Multilingual Book NLP

BookNLP (Bamman et al. 2014) is a natural language processing pipeline for reasoning about the

linguistic structure of text in books, specifically designed for works of fiction. In addition to its pipeline of part-of-speech tagging, named entity recognition, and coreference resolution, BookNLP identifies the characters in a literary text, and represents them through the actions they participate in, the objects they possess, their attributes, and dialogue. The availability of this tool has driven much work in the computational humanities, especially surrounding character (Underwood et al. 2018; Kraicer and Piper 2018; Cheng 2020}. At the same time, however, BookNLP has one major limitation: it currently only supports texts written in English. In this talk, I will describe our efforts to expand BookNLP to support literature in Spanish, Japanese, Russian and German, and create a blueprint for others to develop it for additional languages in the future.

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NAACL 2019.

Keywords: multilingual, pedagogy, NLP

The Interface(s) of a Virtual National Collection

Carlotta Paltrinieri * [1], Lora Angelova *

[2], Gethin Rees *

[3], Grant Miller [4], Jo Briggs [5], Bernard Ogden [2]

[1] Historic Environment Scotland - Towards a National Collection – United Kingdom
[2] The National Archives – United Kingdom
[3] British Library – United Kingdom
[4] Zooniverse – United Kingdom
[5] University of Northumbria at Newcastle [United Kingdom] – United Kingdom

Towards a National Collection (TaNC) is a five-year £18.9 million investment in the UK's world-renowned museums, archives, libraries and galleries (GLAM). TaNC will allow to formulate new research questions, increase visitor numbers, and expand and diversify virtual access to UK heritage. Eight small-scale Foundation Projects – made of collaborations between Higher Education Institutions (HEIs) and Independent Research Organisations (IROs) - are laying the foundations for this future virtual national collection. This panel includes papers by the representatives of three Foundation Projects: Deep Discoveries (Lora Angelova , Jo Briggs); Locating a National Collection (Gethin Rees), and Engaging Crowds (Samantha Blickhan). Each project is developing a proof of concept user interface that aims at engaging different audiences (from experts to casual users) at different levels of agency (from participatory methods to serendipitous discovery) - setting an example for organisations dealing with similar digital collections and technologies. We are also submitting the interfaces demos in the poster/ demo section.
Deep Discoveries joins HEI-based computer vision experts, GLAM professionals, and UX researchers to explore the opportunities afforded by AI-enabled visual similarity recognition technologies for cross-collection image searching. A central aim of the project is the delivery of a prototype to demonstrate the *'research'* and *'discovery'* potentials of a novel technology to multiple types of users. The complex goal of bridging diverse user searching tasks was further complicated by the distinct drivers of our transdisciplinary team. A critical intervention occurred at the interface design stage, with the integration of a Design Research team and the development of a shared vision and a joint vocabulary. The interface design served to cultivate a balance between advancements in computer vision technology and existing end-user knowledge, skills and adaptability. Our teams came to view the interface as a boundary object, a tool that enabled, if not an agreement on the research approach, then certainly a shared understanding and way forward. We propose that the interface can serve as a site for collaboration across the TaNC programme, mediating the distinctive drivers and professional demands of all stakeholders, from the complex needs of specialist researchers and requirements of heritage organisations,

*Speaker

to the discovery-driven demands of general audiences. Bernard Ogden, the project's web developer, will also attend and take questions on the interface prototype.

Locating a National Collection - LaNC aims to help cultural heritage organisations to use location data to connect collections and engage audiences. Location-based interfaces such as web maps offer opportunities to open up collections to new audiences and uses. Place metadata can form the basis of engaging stories and tangible links between overlooked groups and local pasts that underscore notions of community empowerment. LaNC seeks to identify how the design of interfaces can be tailored to meet the needs of diverse users thus improving uptake and broadening the appeal of digital cultural heritage. To this end we gathered structured feedback from two groups: cultural heritage professionals and the public. Interviews with cultural heritage professionals helped us understand motivation and priorities in the sector. Audience research included surveys and focus groups with representative samples of the UK population that offered insights into attitudes and behaviour alongside opportunities to test interface ideas. The research has demonstrated how values, such as local identity, alongside motivations such as curiosity around heritage visits offer hooks into cultural heritage collections. These findings will inform the development of LaNC's map-based prototype, providing insights into how geospatial data structures and interface design can help institutions leverage serendipitous discovery and curiosity-driven exploration of their collections.
Engaging Crowds investigates the practices around citizen research projects, particularly how volunteer audiences engage with these projects online. It explores practices around creation, use, and reuse of heritage data, as well as the potential opportunities for each. A major component of the project is the creation of a bespoke 'Indexing' interface for the Zooniverse crowdsourcing platform that will be available to future project creators as part of the Project Builder, a free browser-based tool that allows anyone to create their own crowdsourcing project for free. The indexing tool is intended to allow volunteers greater agency around how they want to participate in a project. Volunteers can choose to work on subject matter they are already interested in, or discover new and unfamiliar subjects. Additionally, *Engaging Crowds* offers support to heritage institutions hoping to explore opportunities for citizen research with their own materials via workshops and, eventually, a report recommending best practices for supporting online public engagement with heritage collections throughout the lifecycle of a crowdsourcing project-from conception to design, data collection to sharing results.

Keywords: serendipitous discovery, visual search, crowdsourcing, geospatial data structure, GLAM sector, digital cultural heritage, computer vision

Training Interfaces for the 2020s

Vicky Garnett [*†] [1,2], Toma Tasovac [* ‡] [1,3], Ellen Leenarts[§] [4,5], Tatsiana Yankelevich[¶] [5,6], Ricarda Braukman[‖] [4,5], Costas Papadopoulos[**] [7,8], Marianne Ping-Huang[††] [8,9], Susan Schreibman[‡‡] [7,8]

[1] Digital Research Infrastructure for the Arts and Humanities – Digital Research Infrastructure for the Arts and Humanities – France
[2] Trinity College Dublin – Ireland
[3] Belgrade Center for Digital Humanities (BCDH) – Serbia
[4] Data Archiving and Networked Services – Netherlands
[5] SSHOC – Netherlands
[6] Association of European Libraries (LIBER) – Netherlands
[7] Maastricht University – Netherlands
[8] dariahTeach – Netherlands
[9] Aarhus Universitiet – Denmark

This panel session will look at the experiences of three emerging and established training initiatives within the Digital Humanities Training sphere. Since 2015, the increase in training resources that address the needs of researchers, particularly in the area of research data management and train-the-trainer materials has grown considerably. Projects launched since the mid-2010s more and more have included training and education as strong components of their mission. Yet with this increase in training, education and skills development, where do these training initiatives see their training materials meeting the future needs of researchers, especially in the context of available interfaces, both for the creation and consumption of learning resources? And crucially, how has the Covid Pandemic changed the modalities of creating and making available learning content?
The speakers in this panel will address these issues with a view to initiating a conversation about the development of virtual training interfaces for the 2020s and beyond.

Finessing an interactive user-interface for DARIAH-Campus

DARIAH-Campus was officially launched in December 2019. It was formulated as part of the DESIR project with the intention to provide a sustainable one-stop shop for existing training resources created within the DARIAH community, while also providing original training resources written by and for (digital) humanists at all career stages. One of the crucial elements of design for this platform was the ability for the creators of these resources to upload their

[*]Speaker
[†]Contact person: garnetv@tcd.ie
[‡]Contact person: ttasovac@humanistika.org
[§]Contact person: ellen.leenarts@dans.knaw.nl
[¶]Contact person: Tatsiana.yankelevich@libereurope.org
[‖]Contact person: ricarda.braukmann@dans.knaw.nl
[**]Contact person: cpapadopoulos84@gmail.com
[††]Contact person: mph@cc.au.dk
[‡‡]Contact person: s.schreibman@maastrichtuniversity.nl

content themselves via a GitHub repository, thus giving control of these resources back to the community. This interactive interface has become a unique selling point for DARIAH-Campus, but also a barrier to some users who are less tech-savvy. Focus within the team has shifted therefore to creating, testing and launching a dual-interface to support and enable different editorial workflows: one based on the GitHub workflow allowing direct submissions via GitHub, and a second with a Content Management System built on top of the GitHub workflow, making the process more user-friendly. This presentation will give an overview of the challenges and barriers DARIAH-Campus has faced in developing and finessing its user interface in the nearly 2 years since its launch.

Interfaces to training and engagement for virtual training resources during COVID-19 – SSHOC Case Study

The Social Sciences and Humanities Open Cloud (SSHOC) project aims to support and raise awareness of the European Open Science Cloud (EOSC). Within the project, a team of researchers are tasked with organising training events, and building a training network in Social Sciences and Humanities (SSH), all with the purpose of raising awareness and supporting knowledge exchange in SSH and Open Science. The team has done this through the development of the SSH Training Discovery Toolkit, a curated *train-the-trainer* focussed collection of materials; and by establishing the SSH Training Community, which brings together more than 150 trainers in the field. They have also established workshops around Research Data Management, engaging virtual training, and evaluation, etc. Here in particular, the global pandemic forced the addition of another interface, as these workshops originally intended for face-to-face delivery were moved to the virtual space. This presentation will discuss the challenges SSHOC has faced in terms of metadata around training resources that are necessary for creating the SSH Training Discovery Toolkit interface, as well as how they overcame the challenges that moving training workshops from the real world to virtual space created.

#dariahTeach: Multimodal Interfaces for Student-Centred Teaching/Learning
This paper focuses on the interfaces developed for #dariahTeach (https://teach.dariah.eu/), the open-source, freely-available online platform for digital arts and humanities curriculum, with a particular focus on the courses that were recently released as part of the project IGNITE: Design Thinking & Making in the Arts and Sciences. These courses, developed specifically for Masters students, took a multimodal approach to course content, utilising videos, audio, timelines, slideshows, and interactive quizzes. They were utilised in both formal postgraduate educational programmes (in the Netherlands and Denmark), as well as in less formal workshops and summer schools during the lockdown. This presentation will discuss the interactive design cycle used to develop these courses, as well as the integration of what are considered more playful learning objects (videos, interactive quizzes) alongside more traditional assignments (e.g. articles and book chapters) for a virtual classroom experience. The presentation will reflect on the lessons learnt through focus groups, interviews, and surveys to utilising #dariahTeach both before and during Covid-induced virtual teaching.

Keywords: Interaction, Interfaces, EOSC, SSH, Trainer Community, Training Resources, Train, the, Trainer, COVID, 19, Virtual Classrooms, Training and Education

Interfaces for GLAM and Cultural Heritage Institutions

Computational annotation of architectural heritage

Authors

Marissia Deligiorgi (m.deligiorgi@cyi.ac.cy), Andreas C. Andreou (aandre28@cs.ucy.ac.cy), Maria I. Maslioukova (migari01@cs.ucy.ac.cy), Christina Zavou (czavou01@cs.ucy.ac.cy), Melinos Averkiou (m.averkiou@cyens.org.cy), Evangelos Kalogerakis (kalo@cs.umass.edu), Georgios Artopoulos (g.artopoulos@cyi.ac.cy)

Abstract

One of the most widely investigated computational methods in material culture enquiry, and specifically in architecture, archaeology and built heritage, regards the application of computation for the unsupervised annotation and classification of large datasets, or big unstructured data that otherwise would require a highly laborious supervised marking and analysis process by trained and skilled experts. In many of these operations, computer vision methods are used to analyse datasets in order to annotate them, e.g., the geo-reference of series of aerial photos, or the semantic analysis of digital assets in large repositories of libraries, museums, etc. Currently, computer vision-enabled operations can successfully classify objects by high level attributes across basic level categories, e.g., a chair, vase, column (Wang 2017). Arguably, the next step in the development of these methods is their application for unsupervised semantic analysis of more complex digital representations of objects, in terms of shape, but also to classify variations of geometric configurations that belong to complex assemblages of larger scale, i.e., architecture styles of buildings. This is typically done mostly by experts who identify a building's historic phases and components chronologically based on spatial and social context, technique of production, provenance, style and geometric or material features, e.g., colour (Historic England 2021). The application of logic and symbolic analysis through recursive mechanisms in architecture, has been used on several occasions in the past – by some researchers for plan configuration classification of historical architecture, for didactic purposes, while by others for the analysis of the unique characteristics of the design process of an architect who was prominent in the history of architecture (Steadman and Mitchell 2010; Stiny 2000).

Contextualised in the field of computation analytical methods in architecture, this paper will present the development of an online 3D interface for architectural annotation of built heritage and the study of monuments and buildings (https://annfass-srv.cs.ucy.ac.cy). This 3D interface assists in identifying a building's architectural components (e.g., arch, dome), understanding stylistic influences (e.g., Gothic, Byzantine), understanding its history, and in comparing it to other buildings of the same period.

Literature in computational methods for the analysis of building features and shape analysis relies on 2D representations, e.g., images, architectural drawings, floor plans etc., but recent technological advances have allowed researchers to acquire high quality 3D data (e.g., point clouds, meshes etc.) of monuments 'as built', which are more informative and descriptive representations than drawings or floor plans. Wide access to digital 3D documentation and representation methods and the evolution of deep learning methods in processing 3D data have been the source of inspiration for the development of the digital interface discussed in the paper. This online 3D interface relies on deep learning, using 3D Convolutional Neural Networks, to classify the architectural stylistic influences of heritage buildings and historically complex monuments with multiple construction phases based on 3D analysis instead of 2D image-based analysis. This process can contribute to educational activities, as well as facilitate the automated classification of datasets in digital repositories for scholarly research in digital humanities.

Acknowledgements
Evangelos Kalogerakis (kalo@cs.umass.edu)
Gustavo Patow (gustavo.patow@udg.edu)

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Interfaces for 3D Scholarly Editions: A New Paradigm for Three-dimensional Scholarship

Costas Papadopoulos *† [1], Susan Schreibman *

[2], Nick Fung [1], Kelly Gillikin-Schoueri [1], Cristina Scheibler [1]

[1] Maastricht University – Netherlands
[2] Maastricht University – Netherlands

There are several challenges unique to 3D scholarship: Various disciplines and communities of practice, including medical experts, archaeologists, game developers, and heritage professionals, are involved with 3D objects of some kind, each bringing their own research objectives and publishing expectations. This variety is further confounded by the array of methods, tools, and software available for developing, disseminating, and interacting with 3D content. 3D models available on the Web are often hosted in general online warehouses (e.g., SketchFab, 3D Warehouse, Thingiverse, or Turbosquid) and/or in academically-focused digital libraries and repositories (e.g., Europeana, CyArk, and 3D Icons). More often however, 3D models, especially those developed for research purposes, are used primarily for the production of static images and animations in conventional publication formats. On the one hand this is due to the lack of adequate publishing options that could support 3D beyond mere illustrations, while on the other, because 3D - similar to other forms of digital scholarship - is not recognised as equal to more 'conventional' types of academic work, eg. journal articles or monographs. Due to these two factors, and despite the long tradition of 3D scholarship especially in cultural heritage contexts, there have not been any concrete attempts to create a sustainable solution (Champion and Rahaman 2019; Champion 2018) that will enable researchers to publish their 3D work as originally intended; e.g., an infrastructure which provides the means to develop new hypotheses and interpretations through testing, alternatives, and simulation (Statham 2019).
The options available for communicating 3D scholarship are rather limited and do not include the critical apparatus required for communicating academic arguments; an apparatus that will allow researchers to incorporate the material that informed their decisions, while also allowing readers to trace the process of knowledge creation. As a result, the interfaces of existing platforms for 3D visualization (or platforms that support 3D content among other modalities) follow the paradigm of more conventional browse and search interfaces, thus either treating 3D models (either digitised objects or computer graphic reconstructions) as supplementary to other sources of information (e.g. text) or focusing more on the technical characteristics and rendering modes of the models. In both cases, such interfaces do not provide the means to use 3D models as central components of the narrative, therefore diminishing their role in knowledge production.

PURE3D, a project funded by the Platform Digitale Infrastructuur - Social Sciences and Humanities (PDI-SSH), aspires to break new ground by building a digital infrastructure for 3D

*Speaker
†Contact person: k.papadopoulos@maastrichtuniversity.nl

Scholarly Editions (Schreibman & Papadopoulos 2019; Papadopoulos & Schreibman 2019) in which, 3D models will be treated as 'texts', thus assuming a central role in the narratives being created, and operating as fora for scholarly argument and debate. Drawing from the proposed framework for 3D scholarly Editions, this paper will first evaluate existing 3D interfaces, and then, based on preliminary results of a user survey and a series of focus groups with makers and users of 3D scholarship, it will present initial ideas for 3D interfaces that would serve as tools for 'prying problems apart and opening up a new space for the extension of learning' (Apollon et al., 2014, 5-6).

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Keywords: 3D, 3D scholarly editions, 3D models, 3D Digitisation, virtual worlds, annotation, apparatus, paradata

Maps, threads and notes. Navigating hybrid modes of encounter and knowledge production with the Deep City Symposium digital platform

Darío Negueruela Del Castillo * [1], Lucía Jalón Oyarzun , Gordan Savicic

[1] University of Zürich [Zürich] – Switzerland

How can we conceive of a digital interface that avoids the many ills of our online tendencies for over simplified mono-modal interaction, closure of horizons and effective polarisation and segregation? How to seize the current pandemic situation, which obligates uncertain and unstable hybrid forms of attendance and participation (physical-virtual-remote) as an opportunity for innovation? The Deep City International Latsis Symposium, organized at the EPFl and with Lucía Jalón and Darío Negueruela as scientific coordinators, was originally planned for spring 2020, and had to be rethought in light of travel restrictions and the impossibility to gather physically in a venue. It finally took place in March 2021 in three cities simultaneously through an innovative digital interface or hybrid conferencing designed together with Gordan Savicic at Computedby. In this article we describe and assess the process of conception and design of this digital platform, within a broader analysis of the current context and shortcomings of our digital interfaces for knowledge production, exchange and diffusion. The current pandemic situation has brought about numerous challenges and opportunities for the ways we interact with our peers and broader audience in the context of academic and research activities. For many, this has meant endless months of distant learning/teaching/collaborating through digital communication platforms and software in an unprecedented shift that has also brought screen fatigue and affected personal well-being and the quality of our social interactions. Ultimately this is having an undeniable impact on innovation, learning and knowledge production. Arguably, this is due to the fact that physical presence allows for a variety of modes of encounter and dialogue that include non-verbal corporal communication, odoral and haptic communication, and a crucial sense of presence that affect our affective engagement. It is widely accepted that co-presence plays a key role within physical modes of interaction and collaboration in the context or with the aim of innovation and knowledge production. Softer modes of co-presence that allow for social bridging (Florida) and weak links (Granoveter) are said to facilitate organic modes of solidarity (Durkheim) that are constitutive of urban societies and foster social, economic and cultural innovation (Florida, Negueruela del Castilo). Hegemonic digital interfaces are not equipped for a better and wider scope of modes of encounter and dialogue. Moreover, Smartphones, ICT and the internet have also meant the explosion of spaces for interaction(ref), with many channels existing in simultaneity, with the associated multitasking. In this respect, we are dealing also with the difficulty of articulating digital forms of co-presence with a required *multipresence* and *multimodality.*

*Speaker

Our ambition was to craft an interface for Deep City that could integrate a variety of audiovisual and textual, acknowledge the situatedness of collaborating and dialoguing as meaning-making practices in need of enriched content, and provide a geography of emergent knowledge which can be navigable asynchronously with the aid of the interface.

In addition, we intended to build an interface that would enable scholarship as a living and interactive archive, rather than facilitating a mere repository, thus challenging and expanding the horizons of digital publishing 'on the go'.

Keywords: Presence, space, interaction, archive, geography of knwoledge

The Making of Interfaces

Accounting for Data Uncertainties in Visualisations for Humanistic Research: the Case Study of SiteVis for Archaeological Settlement Data

Georgia Panagiotidou * [1,2], Jeroen Poblome [2], Ralf Vandam [2,3], Andrew Vande Moere [1]

[1] Research[x]Design, KU Leuven – Belgium
[2] Sagalassos Archaeological Research Project, KU Leuven – Belgium
[3] Vrije Universiteit Brussel [Bruxelles] – Belgium

Data visualisation is commonly used by (digital) humanities researchers to interact, explore, and analyse data as it can successfully support new readings into otherwise known data. Nevertheless, visualisations also tend to transmit a false sense of objectivity and finality in their depictions (Kennedy et al. 2016), as their design and their use of conventions, unwillingly hide underlying data issues and uncertainties from their user-readers. Accordingly, as historical datasets often contain partial, incomplete, biased or even contradictory data points, their visualisation can bring misguided confidence in the analysis. Accounting for data issues and uncertainties in data visualization is therefore a crucial challenge the humanities overall (Windhager, Salisu, and Mayr 2019).
In this paper, we present SiteVis, an interactive visualisation for data analysis that tries to account for underlying data uncertainties of the archaeological dataset it represents. SiteVis was developed as part of the Sagalassos Archaeological Research Project and was the result of a two year-long collaboration between archaeologists and data visualization researchers.

Located in south-west Turkey, the archaeological site and 1200 km2 wide study region of Sagalassos has been the focus of intensive interdisciplinary research for over thirty years. During this time, by means of excavation, extensive and intensive surveying, and geophysical and remote sensing research the project sampled over 300 locations in the region and assembled a comprehensive settlement dataset indicating past periods of human activity as well as the ecological contexts of these. SiteVis, was meant to facilitate the exploration of this dataset for insights and help answer questions such as why settlements were built at specific locations and what drove their continuity or instability over time.

Underlying data issues, however, related to the project's deployment of discrepant data collection methods, the contextual field settings as well as various interpretational assumptions made in the data collection process, brought uncertainty to the emerging insights and provoked a critical stance from the archaeologists. Rather than overlook these issues, we instead encoded the archaeological methods alongside the core settlement dimensions, added features to make the interpretations transparent and allowed data to be viewed under different levels of assumption.

*Speaker

We thus discuss the process of creating this visualisation, our design choices in relation to the issues we encountered as well as lessons learned from the deployment. We close with a critical reflection on how *interfaces* for the digital humanities can become more transparent and account for inherent uncertainties of humanities data. We believe that this paper will be of interest to humanities projects that use visual analytics as part of their research process and, just as archaeologists, only have access to partial, incomplete or even contradictory datasets.

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Keywords: data visualisation, data uncertainty, archaeology, critical data visualisation, data issues, spatiotemporal settlement data

Designing for Discovery: Using a dual approach for Remote Co-design with researchers to optimise a Discovery Interface for Social Science & Humanities researchers.

Paula Forbes * [1], Stefano De Paoli *

[1], Eliza Papaki [2], Laure Barbot [2], Olena Saienko [1]

[1] Abertay University – United Kingdom
[2] Digital Research Infrastructure for the Arts and Humanities – DARIAH-EU – France

The aim of the TRIPLE project (https://www.gotriple.eu/) is to help social sciences and humanities (SSH) research in Europe to gain visibility, to be more efficient and effective, to improve its reuse within the SSH and beyond, and to dramatically increase its societal impact. As part of this aim, we are designing a new 'Discovery' platform for SSH scholars and other interested stakeholders to enable them to access relevant research publications, find other scholars and to find data for possible re-use. To ensure the new platform (named GoTriple) meets the needs of its users we have been involving stakeholders in our research activities from the very start of the project. The work described in this paper sits within the wider co-design activities of the Triple project which will also include innovative services such as visual searches, annotation, a recommender system, new ways to connect with researchers and other stakeholders and also crowdfunding functionality.
This paper describes how, in spite of the ongoing Covid-19 pandemic, we have reached out to stakeholders and conducted co-design activities with them to gain a better understanding of their working practices and to find how the various functionalities of the GoTriple platform could best support them. We will discuss the evolution of the co-design / co-creation process and the practical use of the methodology undertaken with researchers and other end-users to inform the development process.

The focus of this work was to understand SSH researchers' discovery journey and to see where the GoTriple platform could support their discovery processes. To do this we have utilised a two-pronged approach, one method to investigate what researchers tell us about their discovery journey (by having them map this in an online workshop session using Miro), and a second method to record their discovery process in a Cognitive Walkthrough task, where the researcher talks the workshop co-ordinator through the process as they do it in a recorded online session, the process is then mapped by the researcher afterwards to enable a comparison. We have modified a mapping methodology described by (Bødker, Lyle, & Saad-Sulonen, 2017) who used paper stickers of technology artefacts to 'map' the technological interactions within a volunteer community, using the same approach but in a digital setting using the whiteboard tool Miro.

*Speaker

This dual approach (Mapping + Walkthrough) was decided upon as, although the workshop 'mapping' was very informative and gave a very good visual overview of the process, we were concerned that sometimes what people say they do does not always reflect what they actually do. By conducting research using both methods, we can make a comparison and check to see if there are any major differences. The results will inform the developers about current practices and identify any pain points where GoTriple may be able to provide a smoother discovery process for researchers and other stakeholders. We have been working closely with our Interface designer and our results will help to inform the new GoTriple platform (the first prototype of GoTriple will be available in September 2021 which would coincide nicely with the Dariah Interfaces conference).

Keywords: Co, Design, Discovery, User Journey Mapping, SSH, Research Methods

Human vs. machine vs. social interfaces - The SSH Open Marketplace

Stefan Buddenbohm * [1], Laure Barbot * [2], Cesare Concordia [3], Edward Gray [4], Tomasz Parkoła [5], Michał Kozak [5], Justyna Wytrażek [5], Klaus Illmayer [6]

[1] Göttingen State and University Library – Germany
[2] Digital Research Infrastructure for the Arts and Humanities – DARIAH-EU – France
[3] Consiglio Nazionale delle Ricerche [Pisa] – Italy
[4] Huma-Num : la TGIR des humanités numériques – Centre National de la Recherche Scientifique : UAR3598 / UMS3598 – France
[5] Poznan Supercomputing and Networking Center – Poland
[6] Austrian Centre for Digital Humanities and Cultural Heritage (Austrian Academy of Sciences) – Austria

The SSH Open Marketplace (https://marketplace.sshopencloud.eu/), built as part of the Social Sciences and Humanities Open Cloud (SSHOC) project, is a discovery portal for the SSH research community comprising tools & services, training materials, datasets, publications and workflows.
Designed as a catalogue contextualising its resources by creating links between them and showcasing their use in research scenarios (workflows), the interfaces of the SSH Open Marketplace are crucial for the discovery and reusability of its content.

How does one build convenient, reliable, and accurate interfaces for a discovery portal? Which audiences (human, machines) and technologies have to be addressed by the interfaces and in which priority? What does it mean to be user-friendly for a web service in the world of research infrastructures? These are some of the questions we would like to discuss with the DARIAH Annual Event attendees.

Three interface dimensions will guide our short demonstration of the beta version of the SSH Open Marketplace:

The human individual interface dimension or user experience (UX) design and user inter-face (UI) (Graphical User Interface: https://marketplace.sshopencloud.eu/): SSH Open Marketplace is built to be a user-friendly portal designed on the principles of Human Center Designed (HCD) for the SSH community, with a low entry threshold for users' contributions. The design of the SSH Open Marketplace, developed by the Poznan Supercomputing and Networking Centre (PSNC) and implemented by the Austrian Centre for Digital Humanities and Cultural Heritage (ACDH-CH), has been built consulting target user communities. But still we seek for further feedback from the attendees of the demo

*Speaker

session to identify possible improvements.

The machine-readable interface dimension or REST Application Programming Interface (API documentation:
https://s.gwdg.de/pymPIp): the SSH Open Marketplace includes a REST API allowing experienced users to search and retrieve detailed information and even to add information. Particularly the last aspect would be of interest as to discuss how to provide easy means for adding new content to the marketplace using its API, which would likely be of inter-est for institutional users. A hackathon relying on some of the API functions is planned for September 2021, and our demo will also allow attendees to gain an overview of the hackathon tasks or to announce interest in taking part.

The social-structural interface dimensions or gateway for SSH resources in the European Open Science Cloud (EOSC): https://marketplace.eosc-portal.eu/: the SSH Open Mar-ketplace is a contribution to the SSH branch of the EOSC, and as such it can be seen as a communication interface between the EOSC, its infrastructures and the SSH research communities interested in digital methods and practices.

The demo session during the DARIAH Annual Event will touch upon all three and provoke a vivid discussion with the audience. We also hope to create a sense of awareness or ownership for the SSH Open Marketplace among the DARIAH and DH community as it is "their" service - a discovery portal for the SSH, in which they can add, curate, connect/contextualise and find the tools and services they need to complete and enhance their research.

Keywords: marketplace, discovery, context, reusability, human interface, API, EOSC, curation, SSH

The Polifonia portal: a confluence of user stories, research pilots, data management and knowledge graph technology

Femmy Admiraal *† [1], Andrea Scharnhorst * ‡ [2,3], Peter Van Kranenburg [5,4], Christophe Guillotel-Nothmann , Paul Mulholland [6]

[1] Data Archiving and Networked Services (DANS) – Anna van Saksenlaan 51 2593 HW Den Haag, Netherlands
[2] Digital Research Infrastructure for the Arts and Humanities – DARIAH-EU – France
[3] Data Archiving and Networked Services – Netherlands
[5] Meertens Instituut – Netherlands
[4] Utrecht University - UU (NETHERLANDS) – Netherlands
[6] University College London (UCL) – Department of Chemistry, University College London, 20 Gordon Street, London, WC1H 0AJ, UK, United Kingdom

This paper takes as an example the envisioned portal of the newly started Polifonia project that interlinks resources from very rich, old, established archives while making optimal use of the latest semantic web technologies. In the project, ten research pilots, spanning from historical bells and organ heritage, classification of polyphonic notated music, to the historical role of music in children's lives, form the driving force behind the development of the dedicated interface. Based on a mixture of participation and participatory observation, we describe and reflect on the processes involved in making the portal. In other words - exemplified with the case of Polifonia - we reflect on the role of interfaces (of various types, shapes, manifestations and/or durations) to organise knowledge in an interdisciplinary project. In particular, we focus on the role of data management within the project as a key component of research methodology and cross-disciplinary collaboration, rather than an administrative exercise. The knowledge generated by this part of the project serves at least three different purposes: (1) to envision new research questions (competence questions) guiding the engineering backbone processes; (2) to define the future elements of the portal both for experts, other researchers, wider public and specific parts of the wider public; and last but not least, (3) the documentation task needed to support reproducibility and FAIRness of all data processes. Figure 1 below illustrates how the three components, namely the sociotechnical roadmap of the portal, the ontology-based knowledge graphs created in the research pilots, and the data management plan form three complementary components of the Polifonia project, that ultimately all feed into the web portal.

Figure 1: Three components involved in the Polifonia portal design
In this paper, we claim that behind any interface there is the need for a layer of interfaces that form the basis of the final interface visible to the public. These procedural, intermediary, interfaces take the form of meetings, shared notes, github presence - and will result in products

*Speaker
†Contact person: femmy.admiraal@dans.knaw.nl
‡Contact person: andrea.scharnhorst@dans.knaw.nl

of their own (Data Management Plan, knowledge graphs), as well as inform the decisions during the process of designing the portal.

Keywords: Polifonia, data management, UX design, knowledge graphs

Interfaces and Infrastructures

Ediarum in Spanish. Challenges in Software Localization

Antonio Rojas Castro * [1]

[1] Berlin-Brandenburgische Akademie der Wissenschaften – Germany

Ediarum is an editing environment designed and implemented by TELOTA at the Berlin-Brandenburg Academy of Sciences and Humanities (BBAW, Germany). It is based on two main components: an open-source XML native database (eXistDB) and a widely used commercial XML editor (Oxygen XML editor).

The aim of ediarum is to facilitate the task of encoding texts in TEI format, to store the resulting XML files in eXistDB and to enable collaboration and sharing amongst the members of a team. The central framework of this environment –known as ediarum.BASE.edit– allows the editor to hide the XML tags and use a number of functions through a toolbar and a menu. In other words, the ediarum.BASE.edit's interface increases the usability of the XML editor and speeds up the encoding process and can be adapted to each project's needs. However, this framework is only available in German language. In other words, the code and the language interface are only accessible for and usable by German-speaking users.

While the original goal of TELOTA was to "bridge the gap" between the markup and the editor (Dumont and Fechner, 2015), the interface language creates a barrier for encoders who do not work in German and impedes potential collaborations with other institutions. In order to break this usability and accessibility barrier, in 2020 Proyecto Humboldt Digital (ProHD), a co-operation project between the BBAW and the Oficina del Historiador de la Ciudad de la Habana (Cuba), engaged with an adaptation process involving the internationalization of the software (developing features and code that are independent of language or locale) and the localization in the Spanish locale (creating resource files containing translations). As a result of this process, the project has developed a localization of ediarum.BASE.edit called ediarum.PROHD.edit that can be downloaded on Github.

This paper aims to present ediarum.PROHD.edit and to reflect on the most important challenges encountered during the software localization. After reviewing what "localization" means in Translation Studies (Pym, 2016; Jiménez Crespo, 2016), I will discuss the process of internationalization of the software (mostly variables written in ediarum's default functions), the localization itself (the translation of terms and descriptions displayed in the interface) and some testing undertaken with the Cuban team of Proyecto Humboldt Digital.

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Keywords: accessibility, internationalization, localization, translation, usability

The DARIAH-DE Data Federation Architecture as a highway to FAIR data

Melina Jander * [1], Lukas Weimer *

1

[1] Göttingen State and University Library – Germany

Introduction

The ever-evolving digitisation of research across all disciplines yearns for an equally evolving offer of corresponding services. Diverse and large collections of research data become useful for researchers especially when they are FAIR. Comprehensive, user-friendly, and accurate search interfaces are important elements within this context. The DARIAH-DE Data Federation Architecture (DFA) responds to these requirements with its services. As a well-established integral part of DARIAH-DE, the DFA is now also intertwined with the CLARIN search spaces; most notably the Federated Content Search has become an endpoint for the DARIAH-DE Collection Registry. This integration work (Buddenbohm 2020) is pursued by the BMBF-funded project CLARIAH-DE and aims at research institutions and individual researchers alike.

The DARIAH-DE Data Federation Architecture (DFA)

The FAIR principles have become the major guidelines within the realm of digital research. While they are usually applied to research outcomes-most prominently research data like digitised collections or research findings-the path which leads to those outcomes is significant, too. On this path, researchers are often confronted with the question of how to make their data FAIR without having to invest a lot of money, time, and technical expertise?

Fig. 1. Schematic structure of the DARIAH-DE DFA.

An answer to this question is given by the DARIAH-DE DFA (Fig. 1) through its modular design. It is most adequately described as a combination of services and tools connected through multiple interfaces. Research data and collection descriptions can be accessed by various interest groups, e.g., libraries, research facilities, cultural institutions, data centers, or individual researchers. The graphical user interface and language options invite researchers with diverse backgrounds to work with the DFA, and offer further benefits: The data is indexed with a persistent identifier, user support is guaranteed through a helpdesk (CLARIAH-DE 2021), and all

*Speaker

services are free of charge. The DFA is composed of five core services and tools which can be combined as well as individually utilized. Each tool has its own interface, represented in Fig. 1 through the arrows connecting the tools with the researcher and vice versa.

Upload and describe data: The Publikator enables uploading data and describing them with metadata following the Dublin Core metadata standard; the GUI allows for an intu-itive and time-saving work-flow (Cremer 2018).

Publish data: With its upload into the Repository (DARIAH-DE 2020), the data is in-dexed with a Persistent Identifier (DataCite DOI and Epic Handle) and sustainably stored.

Describe collection: Data collections can be registered and individually described in the Collection Registry.

Model data and create Mappings: In the Data Modeling Environment, the data is distinc-tively modeled or an existing model is applied; furthermore, those models can be associated among each other.

Search and find data: The indexed and modeled data can be searched through the Generic Search.

Thus, all steps that ensure FAIR provision of data are taken into account.

Our talk aims at being a touchpoint to the DFA and an invitation to (international) data providers and users to integrate their collections into the DFA and benefit from its services.

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Keywords: DARIAHDE, CLARIAHDE, FAIR, publishing, modeling, metadata, research data, infrastructure

Towards DARIAH-PL e-infrastructure

Tomasz Parkoła *† [1], Ewa Kuśmierek [2], Dominik Purchała [3]

[1] Poznan Supercomputing and Networking Center – Poland
[2] Poznan Supercomputing and Networking Center – Poland
[3] University of Warsaw – Poland

In January 2021, DARIAH-PL consortium (www.dariah.pl) started a large-scale national project to build Polish e-infrastructure for the arts and humanities, named Dariah.lab. The main goal of the project is to develop and deploy innovative tools and services for multi-context visualization, analysis and interpretation of heterogeneous datasets using linked data, machine learning and alike. Dariah.lab will support development of various branches of creative industries, regional tourism, visualisations as well as advanced management of multimedia digital resources. The project consortium consists of 16 institutions and is led by Poznan Supercomputing and Networking Center (www.psnc.pl).
Conceptually, Dariah.lab is composed of five key interconnected laboratories (each of them having multiple building blocks) for source data, data enrichment, semantic supervised discovery, analysis and interpretation as well as visualisation. Through these laboratories potential users will have access to, e.g. tools for (3D) data acquisition, services for data repositories, knowledge extraction and consolidation mechanisms, data analytics services as well as advanced (3D/geo) visualisation.

Dariah.lab will be composed of multiple components having various forms, e.g. resources, services, software or physical equipment. In many cases, these components will be interconnected or dependent on each other, creating together a complex ecosystem to support art and humanities research. To achieve that, Dariah.lab needs a clear and easy way to make its components available to the end-users - it needs proper interfaces in regard to technical, operational or organisational aspects.

Despite all the complexities of the aforementioned e-infrastructure, we still envision it to be available via a common and single access interface, as a "one-stop shop", where both public and private bodies can find useful components.

Currently, the Dariah.lab interface is an abstract entity, which is browsable/searchable via well known taxonomies (e.g. TaDiRAH, ACM CCS) as well as geographical location and institutional attribution. It has information on the scenarios that are supported, links between the components, supported input and output formats as well as the datasets that it produces or uses. The interface not only has an online (web-based) implementation, but it is also exposed as a dataset for further processing. As a result, it can be easily integrated into existing catalogues, inventories or marketplaces.
In the presentation we would like to explain what the main components of the DARIAH-PL e-infrastructure are and how they are aligned with the expectations of the end-users.

*Speaker
†Contact person: tparkola@man.poznan.pl

Keywords: e, infrastructure, services, resources, DARIAH, PL, digital tools

Theoretical Reflections Around Interfaces

Academic publishers and sharing humanities data: the interface between theory and practice

Matthew Cannon * [1], Rebecca Grant [2]

[1] Taylor Francis Group – United Kingdom
[2] F1000 – United Kingdom

This paper will examine the role of academic publishers as an interface, specically in their support of research data sharing by humanities scholars. The expectation for researchers to share the data underpinning their research ndings originates from stakeholders including funders, publishers, institutions and research communities themselves. The motivations for this are broad and suggest that sharing associated materials will elevate the research in a number of ways - for example, increased openness, transparency, reproducibility, trust, impact and integrity. In creating research data sharing policies to support these aims and motivations, theoretical best practices can be translated to action, transforming research objects into publicly-shared, reusable datasets which evidence the claims made by their associated publications.
Regarding the publication and the linking of research objects, publishers act as an interface between drafts and the Version of Record, by minting persistent identiers and creating links between articles/chapters and other research material. They also provide an interface between best practice data sharing ideals and published data outputs: by providing both notional "gateways" which facilitate or prevent publication, and technical gateways to support data sharing practices. In adopting the role of an interface, we acknowledge the necessity to translate current journal data sharing requirements (often associated with life sciences journals) to policies which reflect the working practices of humanities scholars. These include, but are not limited to, different research methods, denitions of data, data collection practices, ownership and licensing of data, data life cycle and longevity, repository coverage and features, as well as cultural attitudes and sharing practices. Also understanding that while some of these ideas may seem to be straightforward or procedural, in reality they can be messy or fuzzy.
We will also introduce the work of the Humanities Sub-Group of the STM Association's Research Data program, currently composed of representatives from six global academic publishers, and discuss the topics that this group is currently addressing. These include collating denitions of "research data" in the humanities, identifying examples of the benets of humanities data sharing, and developing resources to assist humanities scholars to comply with journal data policies and increase the impact of their research.

Keywords: data sharing, humanities, publisher, journals

*Speaker

Bona Fide, redesigning the search experience

Gissoo Doroudian * [1]

[1] Center for Digital Humanities, Princeton University – United States

Today, more often the issue lies within the idea of metaphors, are they always helpful? At what point can they limit our imagination and language? Currently, the ways in which we converse about, visualize, access and interact with digital content mostly mimic our relationship and processes with paper. When creating and working with digital content we use terms and concepts such as footnotes, endnotes, table of contents, pull quotes, lists, pages, and so on. For instance, a search engine enables us to search through large sets of content and yet the essence of our imagination when creating and using this capability is largely shaped based on what we know from analog systems. When we search for a term, topic, or ask a question what we get back is a list of contents that match our input as if we are being handed a pile of documents which then we have to read and analyze individually to understand the landscape better. I would like to argue that we can reshape our imagination and further realize our capabilities.
Bona Fide, a project at the concept stage, aims to rethink the meaning and experience of current search engines by looking at ways through which new dimensions can be added to content, where the focus is on relationships among contents rather than only focusing on each content as if they are completely independent from each other. Current search engines work well when we have the language to form a question, but do not empower us to expand our language and broaden our knowledge beyond our disciplines to guide us ask new questions. We are witnessing and experiencing more conversations and collaborations that are the result of increased overlaps and interdependencies among disciplines, so why can't the very tools we use to create and share knowledge reflect our changing processes better?

Bona Fide utilizes ideas from Gordon Pask's Learning Theory and knowledge representations known as Entailment Mesh, and Nicholas Negroponte's Architecture Machine.
With Bona Fide, I propose to open a conversation about the values and importance of this approach for creating knowledge in DH and any other discipline, and learn from the audience about their ideas and thoughts on this project.

Keywords: Rethinking Search, Cluster Search, Holistic Search, Knowledge Creation, New Visual Language, New Interactions, Learning Sciences

*Speaker

VIsions of a Timeline: A Videographic, Tool Critical Perspective on the Media Suite's Video Annotation Functionalities

Christian Olesen * [1]

[1] University of Amsterdam [Amsterdam] – Netherlands

Contributing to the DARIAH 2021 event's sub-theme of The Making of Interfaces this paper presents on-going research on the documentation of the CLARIAH Media Suite research environment's interface in a historical, tool critical perspective.
As the central university level access point in the Netherlands for digital, AV collections and tools for analysis of AV materials, the Media Suite is a hub for digital media studies scholarship. Among other collections, the environment offers students and researchers access to the Netherlands Institute for Sound and Vision's broadcast collections and to film and film-related collections from Eye Filmmuseum. The collections can be researched with a number of tools ranging from visualization of word frequencies in metadata, data enrichments and video annotation tools.

In its combined effort to make digital collections and tools available, the Media Suite's teaching initiative Learn is committed to developing tool critical perspectives on the environment's interface and encourages users to reflect critically on the ways in which the Media Suite conditions their research (Koolen et al., 2018). With regard to especially the environment's video annotation functionalities, the Media Suite team attends to the ways in which these relate to previous multimedia scholarship and depart from it, in order to gain a deeper understanding of how the Media Suite functionalities shape qualitative analysis of AV materials. This endeavour focuses in particular on the interaction between users and the environment's timeline and the creation of personal collections of and thematic relationships between clips through segmentation and annotation.

This initiative entails two main components, respectively: (1) to carry out a comparative analysis between previous multimedia scholarship and the Media Suite to understand its timeline in a historical perspective as a tool for knowledge production (Rosenberg & Grafton, 2010), and (2) to critically reflect on the Media Suite as a networked infrastructure on the web in relation to other online (formal and informal) archival resources. In order to achieve the first aim, Media Suite Learn documents the ways in which film and media CD-ROM projects throughout the 1990s and 2000s - in particular the Labyrinth Project, The Virtual Screening Room and Hyperkino - offered access to archival film and television, so as to compare different modes of interaction with audiovisual items, playback modes, timeline organization, annotation approaches to ultimately discern different knowledge regimes. For the second aim, screen recordings are made of online research in and outside the Media Suite to critically compare different contemporary

*Speaker

modes of navigation and interaction with audiovisual items. Based on the recordings made, a videographic work is produced that analyzes the affordances and methodological implications of both historical and contemporary multimedia scholarship.

Currently the first phase is being carried out following the principles of CD-ROM documentation formulated by Sandra Fauconnier (2013), while material is being gathered and organized that documents the Media Suite interface's development since 2014. At DARIAH 2021 the implications of the project will be presented and sequences of the videographic work discussed in relation to the Media Suite's tool critical principles.

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Keywords: Tool Criticism, Videographic Criticism, Video Annotation, Research Infrastructure, AV Archives

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