13th Annual Meeting of the European Coin Find Network (ECFN) and Nomisma.org

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Wednesday 16 September 2026 – Project updates

1. Dédalo v7: Closing the Semantic Gap.

Alejandro Peña Carbonell (Render S.L. (Dédalo))
Juan Francisco Onielfa Veneros (Render S.L. (Dédalo))

In recent years, artificial intelligence has increasingly automated processes across all fields, and it is now becoming deeply integrated into our daily lives. As part of the ongoing evolution of Dédalo, the integration of AI agents and Large Language Models (LLMs) represents not just a tool for performing repetitive tasks, but a fundamentally new way of working with information in the humanities.

For a long time, a semantic gap has existed between how humans interpret data and how machines process it. This divide has forced cultural heritage systems to operate in parallel tracks, one for human understanding, another for machine functionality. However, with the introduction of AI and data vectorization, a completely new scenario emerges.

Dédalo, a specialized manager for Cultural Heritage, is actively embracing this new paradigm. By closing the semantic gap, Dédalo v7 will enable a seamless environment where humanistic inquiry and computational power converge. For numismatics, this means that coin collections, with their complex mix of legends, types, iconography, and historical context, can be navigated more intuitively. AI agents can assist researchers by uncovering hidden relationships, suggesting typologies, and handling tedious data cleaning or matching tasks, freeing experts to focus on interpretation and discovery.

Instead of replacing researchers, Dédalo v7 will use AI as a collaborator. Vectorization of numismatic data will allow for contextual searches that go beyond simple keywords, understanding meaning and similarity. This approach will transform how we manage, study, and share cultural heritage, ensuring that technology responds to the specific needs of the humanities. Dédalo v7 will not just be an update; it will be a bridge between human knowledge and artificial intelligence in service of preserving the past.

2. One Step at a Time: Constructing a Digital Portuguese Monarchy Numismatic Catalogue from Scratch

Rui M. S. Centeno (CITCEM, University of Porto)
Alice Baeta (University of Lisbon (UNIARQ))
Paulo Carmo (University of Porto (FLUP))

The AFONSO Project aims to develop a digital catalogue of Portuguese royal coinage using the Dédalo platform as its technical infrastructure. The classification framework currently adopted for the numismatic material is based on the 7th edition of “Moedas Portuguesas e do Território que Hoje é Portugal” by Alberto Gomes, a reference work largely oriented toward coin collecting and the most currently used classification work in Portuguese numismatics. As the material is studied and incorporated into the database, however, the catalogue is being thoroughly revised and restructured in order to produce a classification system more suited to numismatic scholarship rather than to the needs of the commercial market.

The development of this catalogue has proven more complex than initially expected. This is largely due to the limited historical documentation available concerning Portuguese monetary emissions and the numerous monetary reforms implemented during different reigns, which often resulted in changes in denominations, intrinsic value, equivalences between coinages, and other monetary parameters that are hard to translate into the digital parameters.
Furthermore, in the reference catalogue used as the initial framework, coin types and legends are in most cases not described. As a result, a significant portion of this descriptive work is currently being undertaken as part of the AFONSO Project itself. The absence of detailed typological descriptions frequently makes it difficult to determine what precisely distinguishes certain "types" from others, which in turn complicates the adaptation of the printed catalogue into a structured digital system, as was successfully achieved in the Moneda Iberica Project.
This paper presents the development of the AFONSO Project, discusses the methodological challenges encountered in adapting traditional catalogues to digital research environments, and reflects on possible future directions for the project.

3. Vagueness, uncertainty and their combination with coin find data – current evolvements in NFDI4Objects
Karsten Tolle (Goethe University Frankfurt)
Sebastian Gampe (Goethe University Frankfurt)
David Wigg-Wolf (German Archaeological Institute, Römisch-Germanische Kommission)

Uncertainty, vagueness and their combination are key problem areas in archaeological research. In London 2025, we already reported about our work within the German NFDI4Objects project on uncertain and vague information. The goal of the presentation is to show the evolvements during the last year and to focus on the way we plan to model such information in RDF based on examples of the Antike Fundmünzen Europa (AFE) database.
The objectives would be:
1. Raise the awareness of the problem itself. E.g. how to handle situations where the authority of a coin is not 100% save. How to count it for statistics?
2. In case you want to share vague and/or uncertain information, what are the options to model it in RDF? We will provide our approaches that are close to the existing Nomisma way of doing it. However, we try to go beyond this in order to cover more and a wider variety of cases.
Since we are doing our efforts within the NFDI4Objects, it is also intended to align it with other approaches, to share and set up needed RDF properties and classes or at least to provide a mapping between them.

Thursday 17 September – Session 1: Coin Finds and Digital Approaches (I)

4. WONDERCOINS: A Linked Open Data Ecosystem for Numismatic Heritage in the Western Mediterranean
Elena Moreno Pulido (University of Cádiz)

The WONDERCOINS project (*Wide Online Numismatic Data Environment and Recognition of Coins*) represents a significant leap in the digital management of archaeological numismatics in the Western Mediterranean. Developed by the University of Cádiz (UCA) in collaboration with international partners, this platform (accessible at wondercoins.uca.es) serves as a collaborative hub for the study of monetary circulation in ancient *Hispania* and *Mauretania*.

This presentation will demonstrate how the project utilizes the Dédalo management system to integrate find-spot data from over 15 museums and archaeological sites across Spain, Portugal, and Morocco. By adopting Nomisma.org ontologies and Linked Open Data (LOD) standards, WONDERCOINS successfully bridges the gap between traditional archaeological records and global digital networks.
Key highlights of the presentation include:
Transnational Scope: The digital integration of North African (Moroccan) and Iberian numismatic datasets.
Methodology: The transition from physical museum inventories to a dynamic, map-based research tool.
Scientific Impact: How the platform enables high-resolution spatial analysis of coin circulation from the 4th century BC to the 6th century AD.
By presenting the WONDERCOINS web ecosystem, we aim to showcase a scalable model for regional numismatic databases that enhances heritage protection and fosters international research transparency.

5. Where did they bury the hoards? Urban vs military vs rural areas. Old roads vs new ones. All in the light of the Coin Hoards of the Roman Empire Project (CHRE)
Cristian Gazdac (Babeș-Bolyai University)

The present paper is revealing the benefits of using a large database together with multiple filters of an open-access application, namely the Coin Hoards of the Roman Empire (CHRE) run by the Ashmolean Museum, Oxford (https://chre.ashmus.ox.ac.uk): 7,610,601 coins in all 18,659 hoards, as of February 19, 2026.
The spatial and contextual distribution of coin hoards recorded by the Coin Hoards of the Roman Empire Project to evaluate patterns across urban, military, and rural landscapes, with particular attention to the relationship between older and newly constructed road networks. Utilizing the project's geospatial database, which integrates findspots, closing dates, and contextual classifications, the study compares hoarding behaviour from the late Republic to the fifth century CE. Spatial modelling indicates that long-established arterial routes exhibit cumulative hoard densities reflecting sustained commercial activity, whereas concentrations along newly concentration hoards' areas may suggest new Roman roads. Methodologically, a quantitative and comparative analyses of this huge database will provide new information on the hoarding phenomenon, based on the three main distinctive areas: urban, military, rural.

6. Roman Hoard Data from the Black Sea
Chris Howgego (Ashmolean Museum, University of Oxford)

Roman historians and archaeologists have typically not treated the Black Sea as a whole, perhaps in part owing to linguistic complexity, and in part because the region is less central to their thinking than it is for those studying the Greek or Byzantine worlds. Numismatics is now well-suited to addressing this challenge, owing to digital resources such as the Coin Hoards of the Roman Empire project (https://chre.ashmus.ox.ac.uk/). The project makes available an impressive amount of hoard data for the whole region. That, in combination with the lack of the usual linguistic barriers, the provision of a range of useful visualizations, and the ability to download data for further exploration, means that the time is ripe for systematic analysis. The aim of the paper is to demonstrate the potential by considering a selection of patterns that have either not been sufficiently appreciated or not recognized at all.

7. Coins, clipping and correspondence analysis: Re-examining Britain's last Roman hoards

Kris Lockyear (*University College London*)
Ellen Swift (*University of Kent*)
Kelly Clarke-Neish (*Durham University*)

Since 2024 the AHRC-funded Britain's Last Roman Hoards project has been researching precious metal hoards from the end of the Roman period from Britain. One of the key research questions the project seeks to address is the breakdown of the Roman monetary system and the dating of hoards. It has long been thought that silver siliquae circulated in Britain beyond the traditional end of date of the province in AD 410, and that clipping may be key indicator of the duration of this circulation.

In order to investigate this further, we have catalogued / re-catalogued over 60 of the latest Roman hoards found in Britain. KCN has recorded the hoards including the clipping of the siliquae, adapting the framework Peter Guest created for the Hoxne hoard (Guest, 2005). Having one person assess the clipping has helped provide consistency in the recording of clipping from these hoards and provided much new information. In addition to overall research design and methodology, ES has re-examined the associated metalwork and other non-coin artefacts from c.40 of these hoards, and James Gerrard has looked at the c.20 surviving containers.

KCN and KL then undertook a Correspondence Analysis of the coinage data to assess whether the degree of clipping in the hoards could be an indicator of relative dates of deposition. The results were compared to the suggested dates of the associated metalwork which was determined independently of the coinage. This paper will present some of the results of the project, focussing principally on the application of Correspondence Analysis on this material which has enabled us to suggest a new chronological framework for the deposition of these late Roman hoards.

8. Celtic silver coins of the Prague type, their prototypes and associated small silver coins – Recent research based on new finds in Thuringia

Mario Schlapke (Thüringian State Office for Heritage Management and Archaeology)

The silver coins of the Prague type form a distinct series within the extensive range of “quinar-sized” silver coins from the Late La Tène period in Central Europe. They are characterized by highly abstracted structures (of a head?) on the obverse and a galloping horse on the reverse, and can be divided into four variants. The series takes its name from a find made in 1872 in Prague-Žižkov, Czech Republic. Known find sites for these coins today are located in various regions: Bohemia, Lower Austria, Bavaria and, in particular, Thuringia. It is here, above all, that also pieces described as Prague type-prototypes, as well as small silver coins ("Kleinsilber") with very similar depictions, have been documented in archaeological finds in recent years. In total, we have in Thuringia now almost 80 Prague types, including a well-documented hoard and also 13 prototypes and 11 Kleinsilber. Based on this material, it is now possible for the first time to present in greater detail aspects of the development of the Prague types that have hitherto been considered only in general terms, and valuable insights into the possible regions of origin of this series are emerging. An important aspect of this is a die study across the approximately 150 coins with known provenance across the various distribution areas. To this end, the workflows and pipelines developed in the ClaReNet and DeReNum projects for the IT-

supported die analysis of extensive Celtic coin series are being utilised, and their suitability for smaller coin series is also being tested.

Thursday 17 September – Session 2: Coin Finds and Digital Approaches (II)

9. Challenges of the digitisation of chemical data on coin finds: The example of the bog deposits in Jutland

Aleksander Bursche (University of Warsaw)
Kyrylo Myzgin (University of Warsaw)

Previous studies of coins found in late Roman bog deposits in southern Scandinavia like Illerup Ådal, Thorsberg or Nydam have shown that most of them were imperial denarii from the 1st and 2nd centuries. However, Holger Komnick and Aleksander Bursche suggested that some were irregular issues, most likely cast from copper alloys. In recent years, research into barbarian cast copies of Roman denarii, known as denarii flati, has advanced considerably. In our presentation, we will demonstrate how the presence of barbarian coins can affect the interpretation of war trophies found in Scandinavian sacrifices. At the same time, we are calling for coin find repositories and databases to include a dedicated section or link to the results of chemical composition analyses, which are becoming increasingly frequent.

10. Modelling the Influx of Roman Solidi into Central Barbaricum: Spatial and Statistical Approaches

Anna Zapolska (University of Warsaw)

The influx of Roman solidi into Central Barbaricum represents one of the most visible archaeological indicators of contacts between the late Roman Empire and Germanic societies. Despite the large number of finds in the Baltic region, reconstructing the direction and mechanisms of this influx remains difficult due to the delayed deposition of many hoards and the fragmented nature of the archaeological record.

This paper explores the potential of spatial and quantitative methods for analysing solidus circulation beyond the imperial frontiers. Using the Trąbki hoard from northern Poland as a case study, several spatial-statistical techniques are applied to the distribution of solidus finds, including Kernel Density Estimation (KDE), Nearest Neighbour Index (NNI), and Standard Deviation Ellipses (SDE). These approaches are combined with compositional analysis of hoards using Shannon entropy and the Gini coefficient in order to evaluate patterns of diversity and concentration within assemblages.

The aim is not only to reconstruct possible directions of influx, but also to test whether these methods can help distinguish structured patterns of gold inflow from random accumulation of coins. Particular attention is paid to the methodological challenges posed by incomplete datasets, dispersed finds, and hoards deposited long after the coins entered Barbarian societies.

The study demonstrates that spatial modelling and statistical measures of hoard composition offer a promising framework for analysing the circulation of Roman gold in the Migration Period and provide new tools for investigating the relationship between imperial payments and the emergence of elite networks beyond the Roman frontier.

11. Mountain Monetary Ecologies: AI-Enhanced GIS Analysis of Medieval Coin Finds in the Central Alps and the North-Central Balkans (11th–14th centuries)

Giulio Carraro (University of Trieste)

This paper presents the first results of an ongoing comparative project that integrates GIS-based spatial analysis and AI-assisted data modelling to explore how mountain environments influenced medieval monetary circulation.

The study is based on the creation of a harmonized database of coin finds (single finds and hoards) from two mountainous macro-regions: the Central Alpine arc and the north-central Balkans, with a focus on medieval Bosnia. Numismatic records from publications, museum collections, and archival sources are standardized through AI-supported interpretation and normalization of heterogeneous tabular datasets, enabling the classification of coin types, issues, mints, and chronological phases. QGIS is employed to georeference findspots and to identify spatial and temporal patterns in coin circulation.

This integrated digital workflow allows the detection of multi-currency zones, clusters of monetary concentration, and areas of scarcity, as well as the reconstruction of circulation corridors along mountain passes, valleys, and river networks. By comparing the Alpine and Balkan datasets, the paper highlights both convergent and divergent patterns in the structure of monetary circulation, revealing differences in the relative weight of local and foreign coinages, the role of political borders, and the impact of long-distance connectivity.

Beyond presenting historical evidence, the paper proposes a scalable and interoperable methodological framework aligned with the standards of the European Coin Find Network and Nomisma.org. By conceptualizing the research process as a digital laboratory in progress, it investigates how mountain landscapes generate specific "monetary ecologies" and demonstrates the potential of combining GIS and AI tools for comparative numismatic research across regions, periods, and datasets.

12. Roman and Medieval Coin Finds from Valtellina: New Archaeological Research and a GIS-Based Approach to Numismatic Data

Alessandro Bona (University of Bergamo)
Federico Zoni (University of Bergamo)

The Valtellina (northern Italy) represents a territory of considerable interest, albeit still relatively understudied, for the analysis of monetary circulation and coin use in the Alpine arc between the Roman and medieval periods. The valley occupies a strategic position in the heart of the Central Alps, along the routes that, from the Imperial age through the medieval and early modern periods, connected the Po plain with the main Rhaetian passes. This paper presents the preliminary results of ongoing research on Roman and medieval coin finds from the valley, conducted by the University of Bergamo within the framework of the Interreg Italy-Switzerland Archeo ALPS project. By integrating a critical reassessment of previously published evidence (often scattered across local museum collections and dated publications) with new data emerging from archaeological excavations carried out by the same University in recent years, a dedicated GIS platform has been developed (employing the ontologies of nomisma.org) into which all collected data have been entered. The tool allows for the visualisation of coin find distributions, the stratigraphic contextualisation of individual specimens where possible, and the elaboration of diachronic patterns of monetary circulation. This information will be interpreted in light of the distribution of major road networks, settlements, and ecclesiastical and/or military sites. Drawing on the broader historical framework of the events that shaped the

Valtellina over the centuries, the research aims to reconstruct the dynamics of territorial organisation, the nature and intensity of commercial exchange, and the economic and social structure of the area during the period under examination. Among the future research perspectives is the extension of the numismatic survey to the Swiss side of the Alps, and in particular to the Graubünden Canton, a partner in the Archeo ALPS project, alongside the development of a productive collaboration with the Inventar der Fundmünzen der Schweiz.

13. Managing Numismatic Records from Apulia. A Digital Approach
Federico Carbone (University of Bari Aldo Moro)

This contribution presents the development of digital systems for the management, analysis, and dissemination of numismatic records from Apulia, with particular focus on the AND – Apulian Numismatic Database project. The project aims to build an integrated infrastructure for the collection and standardisation of data related to coin finds, drawing from archaeological contexts, museum collections, archival documentation, and the antiquities market.
By adopting shared standards—especially those promoted by Nomisma.org—and implementing ontology-based open-source platforms such as Dédalo, AND seeks to ensure interoperability, data reusability, and integration within broader digital ecosystems. Particular attention is devoted to the structuring of records (findspots, archaeological contexts, chronologies, issuing authorities), as well as to the management of controlled vocabularies and persistent identifiers.
The paper will also address the main methodological and technical challenges involved in building a regional numismatic database, highlighting the potential of GIS tools, quantitative analysis, and artificial intelligence for investigating patterns of coin circulation. In this perspective, AND is conceived as a testing ground for developing digital models applicable to other regional contexts and for promoting open and sustainable practices in numismatic research.

Thursday 17 September – Session 3: Digital Tools and Data Management

14. Κρητικὸς Χαρακτήρ - Cretan Character: a Digital Numismatics FAIR dataset
Katerina Panagopoulou (University of Crete)
Maria Papadopoulou (University of Crete)
Christophe Roche (University of Crete)
Tonia Lourentzaki (University of Crete)
Dimitrios Malliarakis (University of Crete)

Κρητικὸς χαρακτὴρ (Cretan Character) is a FAIR-compliant digital dataset dedicated to the systematic study of the coins minted by all Cretan issuing authorities (i.e. cities and the Koinon) from the mid-5th century BC to the 2nd century AD, including their spread through the Near East and across the Mediterranean through circulation networks. The project moves beyond conventional digitisation and cataloguing by modelling coins as semantically enriched knowledge entities within an ontology-based framework (Fig. 1).
Reviewing systematically both existing ontologies, notably CIDOC CRM and NOMISMA, and employing standardised vocabularies (RDF, OWL, CIDOC) and explicitly defined semantic relations implemented through the TEDI ontoterminology editor (freely distributed by the University of Crete), the dataset integrates physical descriptions, iconography, legends, control

marks, issuing authorities, and historically grounded interpretations. Coins (Fig. 2) are thus represented not merely as objects, but as complex historical entities embedded in networks of agents, places, symbols, and events.

A key methodological innovation lies in the formulation of research questions in natural language prior to their formalisation as SPARQL queries, ensuring transparency, interpretability, and scholarly reuse. This ontoterminological approach explicitly formalises concepts, definitions, and relations, fostering conceptual clarity, consistency, and interoperability across the dataset.

The dataset (RDF Knowledge Graph) enables advanced analytical perspectives on Cretan civic identities, political authority, cult practices, intraregional, interregional and international connectivity, while preserving uncertainty, attribution, and methodological rigour. By aligning traditional numismatic expertise with Semantic Web technologies, FAIR principles, and machine-processable data models, Cretan Character contributes to the development of reusable research infrastructures for digital numismatics, ancient history, and digital humanities.

The paper will present the conceptual model, methodological choices, and examples of semantically driven queries, highlighting the potential of ontology-based and AI-compatible approaches for the analysis, management, and communication of coin finds.

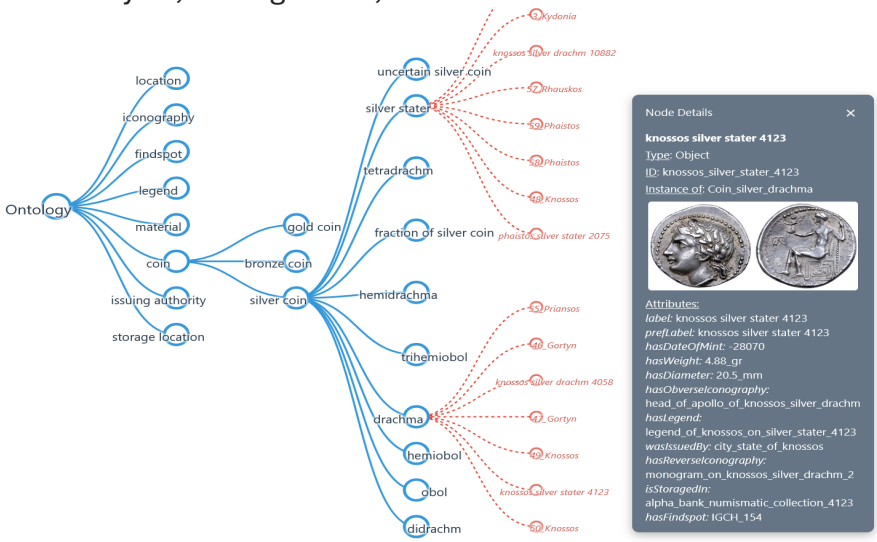

Fig.1 The Cretan Coin Ontology

15. Coin Production in Ancient Greece: Comparing the Results of SILVER, CHANGE, and ACSearch

François de Callataÿ (Royal Library of Belgium)

Producing a die study is an extremely time-consuming task which, in the absence of automatic recognition tools, has so far been carried out for only a minority of coinages, particularly those struck in copper alloy. The Die Studies Database (DSD), hosted in Brussels, currently brings together more than 3,000 die studies, most of them relating to the Greek world. This paper aims to compare these results with the data available through two other powerful digital tools: CHANGE (covering the coinages of Asia Minor and aggregating material from major public coin cabinets) and ACSearch (which performs a similar function for thousands of past auction sales). To what extent can these latter two resources be used as reliable proxies for estimating the number of dies?

16. Implementation of a statistical method to estimate the number of dies on monedaiberica.org (MIB)

Pablo Cerdà Insa (Universitat de Valencia)
Lucas Cerdà Insa (Independent Researcher)
Manuel Gozalbes Fernández de Palencia (Museum of Prehistory of Valencia)

This paper presents a new tool implemented in monedaibérica.org (MIB) project that uses statistical methods to estimate die production across different coin types. Its operation is based on a linear regression model that enables the estimation of the number of dies associated with each typological group in the MIB catalogue, as well as a confidence interval that allows the results to be refined.

The extensive dataset compiled within the project, combined with this resource, provides a quantitative framework for comparative analysis. The resulting estimates will allow users to examine patterns across different mints and to systematically compare different coin series to better understand the production dynamics of Iberian mints.

The implementation will make these calculations accessible both at the level of coin types and within a dedicated section of MIB focused on statistical results. This dual presentation ensures that users can contextualize die estimates alongside typological and descriptive information, while also exploring broader analytical trends within the corpus. The statistical results will be updated according to the number of coins in each type.

Although the method does not replace traditional numismatic analysis, it provides an additional interpretative perspective that enriches the informational depth of the platform. Ultimately, this development aims to expand the analytical capabilities of monedaibérica.org, offering researchers and enthusiasts a new set of tools to explore the scale and variability of Iberian coin production.

17. Automated Identification of Imperial Roman Denarii Using Deep Learning

Andrei Novikov (Independent Researcher)

Roman imperial denarii exist in thousands of varieties, making manual identification time-consuming even for experienced numismatists. The task is further complicated by worn legends, partial flans, and stylistic variation between mints. An AI-assisted system supports researchers and collectors by rapidly narrowing possible attributions based on portrait features and legend fragments.

Using deep learning, identification is largely automated through a multi-stage pipeline (figure 1). The first stage detects the coin and generates a mask, essential for estimating pixel size and confirming it is an imperial denarius. Mask generation uses a fully convolutional network (FCN), and the mask crops the original image, removes the background, and rescales it for the next stage.

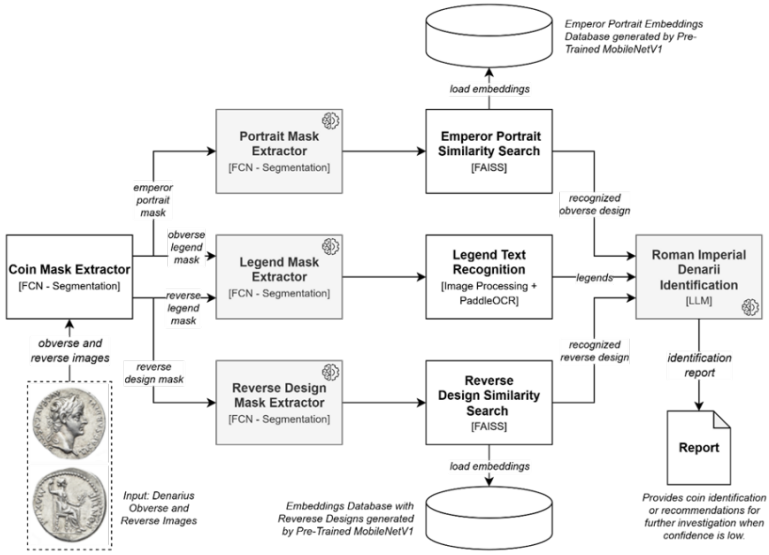

Fig. 1. System architecture of the proposed Roman imperial denarius identification system.

The next stage detects the portrait, whose embeddings are stored in a FAISS vector database for similarity-based retrieval, avoiding heavy classification model training. A similar approach identifies the reverse.

In parallel, the system attempts to detect text on obverse and reverse, which is often nearly illegible and not reliably recognized due to worn or missing legends (figure 2). An FCN-based model generates masks for the text, which are polar-unwrapped to align letters for PaddleOCR recognition. Text reconstruction remains the weakest step, but extracted details can be supplemented by querying an LLM (e.g., ChatGPT) via a REST API to aid identification.

Fig. 2. Example Roman imperial denarius with over 75% of the legend illegible.

Experiments on denarii of the "Five Good Emperors" show nearly 90% accuracy for coins in extremely fine or uncirculated condition, where text is clearly visible and easily recognized. For worn legends, precise text-based identification decreases, and the system relies on the LLM to suggest relevant databases for manual verification. The system performs best on high-quality images, such as those from online auctions, demonstrating its potential as a practical tool for coin analysis.

18. Index cards for a digital catalogue

Manuel Gozalbes (Museum of Prehistory of Valencia)
Pere Pau Ripollès (University of Valencia)

The monedaiberica.org catalogue originates from the index card archive compiled by Pere Pau Ripollès since the 1980s, which laid the initial research foundation for the project. The project is currently expanding its digital infrastructure through the incorporation of a comprehensive documentary archive into the website.
This development has been made possible by the recent donation of Leandre Villaronga's archive to the Museu de Prehistòria de València. The archive comprises approximately 60,000 catalogue cards that will be progressively integrated over the medium to long term. This material holds exceptional historical value and represents a significant enrichment of the project. The present contribution marks the first step in this process.
A central objective of this new archival section is to preserve the original organization of the analogue archive. The digital interface will reproduce Villaronga's structure, enabling researchers to navigate the material according to its original arrangement. The scanned cards will be made accessible through the monedaiberica.org website and linked directly to the coins already included in the database, thereby providing a historical documentary foundation for many of the recorded pieces.
Although this initial phase focuses on the Villaronga archive, the archival section is conceived as an expandable resource. In the future, it may incorporate additional documentation relevant to Iberian numismatics.

19. NUMaD (Numismatic Mapping and Archival Database): from archival legacy to digital research infrastructure

Koen Verboven (Ghent University)
Fran Stroobants (Royal Library of Belgium)

Following our introductory presentation at ECFN 2025 on the creation of a national database for archaeological coin finds from Belgium, we propose a presentation on the next phase of the project, now renamed NUMaD (Numismatic Mapping and Archival Database). The project has progressed from conceptual design to a functional beta version, integrating large bodies of previously unpublished legacy data. In this presentation, we will outline the current status of the database, demonstrate the beta functionality, and discuss the work that remains to be done. By doing so, we aim to foster a discussion within the European Coin Find Network on shared strategies for handling archival data.
This transition has prompted a number of methodological reflections. While object-related numismatic data can be aligned with established Nomisma standards, find-related information requires greater attention. Archival records often employ locally developed terminology for site
classifications, archaeological structures, and find circumstances. Within NUMaD, we are exploring how existing standards and controlled vocabularies can be applied to harmonise these historical terms, while preserving the original wording to maintain transparency. We also consider the status of legacy identifications for coins that are no longer traceable and examine the possibilities and limits of semi-automated or AI-assisted workflows (including OCR and error correction) in converting paper-based archives into reliable digital datasets.

20. New perspectives on public-sector digital infrastructures for recording, linking and analysing coin finds: Case studies from Rome and its territory
Marta Barbato (Ministry of Culture)

Public catalogues of numismatic heritage in Italy have developed through heterogeneous records: national catalogue entries, paper archives, excavation documentation, museum inventories, bibliographic corpora, geospatial datasets and digital images. Fragmentation often separates an individual coin from its archaeological context, discovery event, assemblage, collection history, current repository, typological attribution, and the evidence supporting each statement. Using selected case study from Rome and its territory, this paper reviews current public recording practices and asks how semantic infrastructures can transform dispersed records into interoperable research data.
Particular attention is given to Nomisma.org, whose persistent identifiers and ontology provide shared references for denominations, mints, issuing authorities, materials and other numismatic concepts. The paper argues that identifiers, controlled vocabularies and qualified relations should enter the cataloguing workflow itself, rather than be added only at publication, while preserving uncertainty, source attribution and the distinction between specimens, coin types, find events and assemblages.
The new Italian National Catalogue system, CLIO, offers an important opportunity to test this approach. Its planned move from fixed record templates to modular, ontology-aligned information units, together with semantic relations, controlled vocabularies, geospatial data, digital resources and interoperable services, could enable a more contextual form of numismatic cataloguing. A coin could thus be connected to a type and issue, stratigraphic units, sites and hoards, persons and institutions, archival documents, scientific analyses, images, conservation events and collection histories.
The paper will discuss both potential and unresolved requirements: mappings among CLIO, ArCo and Nomisma.org, uncertain or conflicting attributions, granularity and protection of findspot data, provenance of assertions, persistent identifiers and versioning. The case study from Rome will outline a practical path from isolated records to a reusable network of numismatic knowledge for research, heritage management and public engagement.

21. Coin die links - tools to find and visualize them in the DeReNum project
Sebastian Gampe (Goethe University Frankfurt)
Karsten Tolle (Goethe University Frankfurt)
Markus Möller (University of Leipzig)
Caroline von Nicolai (University of Leipzig)

Die studies are still a central but time consuming task in numismatics. Already since the ClaReNet project that started in 2021, we are working on IT tools to support this activity In the currently running "*De Retibus Nummorum"* (DeReNum) project, we improved and extended our approaches on it. In this presentation we would like to give an update about the recent developments, which we have accomplished together with some of our students. The presentation will focus on:

1. Improvements of the coin die studies pipeline and results of combining different image matching algorithms (ORB and DISK), to determine how best to utilise them for the hierarchical clustering algorithm.
2. Best results of two data challenges as university courses we held on the topics of Celtic small silver and Iron Age Bavaria.

3. Feedback on our own usage of the tools to identify coin dies and their links within the DeReNum project for the celtic Bushel quinarii (Büschelquinare) series, but also Celtic small silver, the Kreuzmünzen from South Germany and the Kaletedou quinarii.
4. Presentation of a student's app, which was developed for making it easy to visualise and explore coin die links and the corresponding coins in a graph.

22. Multilayer Social Network Analysis in Numismatics. A possible answer to cope with the rising data swamp

Anna-Lena Buccoli (Goethe University Frankfurt)
Markus Möller (University of Leipzig)
Caroline von Nicolai (University of Leipzig)
Sebastian Gampe (Goethe University Frankfurt)
Karsten Tolle (Goethe University Frankfurt)

The rising amount of data helps us to see patterns not seen before. However, sometimes we also get overwhelmed by it and just see a data swamp. Social network analysis (SNA) has become popular in archaeology in recent years to answer specific research questions that are network oriented, but it also helps to visualize our data in new ways and with various mathematical metrics, which can sometimes be off-putting.
The aim of this paper is to provide an easy introduction of what a SNA is, how it can be used in numismatics and what some of those metrics mean and can be used for. Often dismissed as a mere gimmick, we want to examine both the advantages and disadvantages of SNA compared to traditional distribution models in numismatics. We will also present a multilayer SNA approach developed for the "*De Retibus Nummorum*" (DeReNum) project, that allows us to add an additional dimension in order to cope with the complexity of Celtic monetary systems. The additional layer could for example be the timeline that enables us to see the changes of coin distributions over time.
We want to explore how such SNAs can be done in a meaningful way, and permits to prove the existence of connections between different locations—as well as between communities at different stages.
Specific application examples will be illustrated using tools developed in different student projects in the field of computer science at Goethe University Frankfurt. These were specifically designed for numismatists, with a focus on usability.

Friday 18 September – Session 5: Digital Numismatics and Data Integration (II)

23. MaBE WebGIS: a digital infrastructure for the spatial study of Byzantine coinage (5th–13th centuries)

Alessandro Rissone (University of Florence)
Silvia Leporatti (University of Florence)
Michele Nesi (University of Florence)
Margherita Azzari (University of Florence)
Alessia Rovelli (University of Pisa)
Andrea Gariboldi (University of Trieste)
Flavia Marani (University of Pisa)

This paper introduces MaBE (Mapping Byzantine Economy), an open-access web geospatial information system (WebGIS) platform designed for the spatial analysis of Byzantine coinage in Western Europe from the 5th to the 13th century. Designed as an interoperable SDI infrastructure that complies with FAIR principles, the system incorporates a geodatabase updated and validated through an extensive and systematic review of bibliographic sources and the main numismatic catalogues.
The current implementation covers the entire Italian peninsula, Dalmatia, and part of the Second Bulgarian Empire. It includes details of over 40,000 coins and around 400 hoards, which are distributed across more than 1,000 sites. The system's architecture is based on PostgreSQL/PostGIS for data management, QGIS for data acquisition and initial processing, and Lizmap for web publication.
Advanced spatial analysis tools are offered by the platform, including thematic and density visualisation, filters by denomination, metal and issuing authority, selections via buffers or custom geometries, and dynamic exploration of occurrences by time intervals. Data can be exported in various formats, including CSV, GeoJSON, GPX and KML. The infrastructure also supports WMS/WFS services, enabling the direct integration of layers into external GIS clients.
A dedicated data entry interface, developed within the QGIS environment, ensures the quality and non- redundancy of information via the combo coin model, while also allowing for the explicit management of varying degrees of documentary uncertainty. Alongside numismatic data, MaBE integrates a wide range of information derived from historical resources (Pleiades, DARE, DARMC and the Barrington Atlas) and geographic and statistical datasets (ISTAT, GNA and PCN). The platform is an innovative tool for analysing the Byzantine economy spatially. It could offer new interpretative possibilities and interdisciplinary research perspectives on monetary circulation, territorial dynamics, and the interactions between the Empire's centres and peripheries.

24. OCBE: Online Coins of the Byzantine Empire. A cross-organization collaboration
Elena Baldi (Princeton University)
Alan Stahl (Princeton University)
Aristotelis Nayfa (Dumbarton Oaks)
Ivan Maric (Dumbarton Oaks)
Jonathan Shea (Dumbarton Oaks)
Julian Baker (Ashmolean Museum, University of Oxford)
Bruno Callegher (University of Trieste)
Giorgio Donato (University of Trieste)

In 2015, Princeton University acquired one of the world's most renowned collections of Byzantine coins, that of British civil servant and WW2 veteran Peter Donald, comprising 179 gold coins, 324 silver coins, and 4,777 bronze coins. Soon after this acquisition, the heirs of Greek-American collectors Chris and Helen Theodotou, approached the Princeton numismatics curator, Prof. Alan Stahl, proposing that Princeton take up the acquisition of 11,255 coins, at advantageous terms.
The combination of these two acquisitions, along with earlier holdings of Firestone Library and the Princeton University Art Museum, are being merged to constitute one of the largest Byzantine coin collections in the world. This unified collection will serve as the basis for a linked-open-data platform that aims at displaying Byzantine coins from many public collections worldwide. The database is being developed as a collaboration of Princeton University (responsible for the late Byzantine period, from Alexios I to Constantine XI), the

Dumbarton Oaks Research Library and Collection (for the Middle period, from Heraclius to Nicephorus III), the Heberden Coin Room, Ashmolean Museum, Oxford University (the Empire of Trebizond), the Università di Trieste, which has agreed to work on the earlier period, from Anastasius to Phocas, and will be hosted on the American Numismatic Society servers. The online database is being set up as a shared-open-data platform, along the lines of other similar works, for example OCRE, following the Nomisma.org ontology.
On this occasion, we are presenting the first working prototype of the database, based on DOC 4.1, the coinage from Alexios I to Alexios III, and the linked coins from Princeton collection. We hope to have MIBE and DOC 4.2 added and working from the end of the year and hopefully have other institutions add to this tool, thus aiding scholarly research.

25. Interpreting Byzantine Coin Finds at Scale: Social Network Analysis, GIS, and Artificial Intelligence

Giorgio Donato (University of Trieste)

The study of Byzantine coin finds has entered a new phase with the emergence of large digital numismatic databases. For the first time, scholars can analyse thousands of finds and hundreds of thousands of coins simultaneously across geographical space and relational structures. However, this transformation also introduces a fundamental methodological challenge: when datasets become very large and visualizations highly complex, how can historians meaningfully interpret the patterns they reveal?
This paper explores how artificial intelligence can assist scholars in interpreting complex visualizations derived from large numismatic datasets. The analysis is based on data extracted from the NOMISMATA database (https://byzantine.units.it/en/), which currently records more than 5,300 coin finds and over 238,000 coins. The paper presents two interpretive case studies drawn from this dataset.
The first example examines a bi-modal network linking issuing authorities and archaeological findspots. Generated from more than 2,200 finds, over 91,000 coins, and nearly 220 issuing authorities, the network reveals patterns of co-occurrence among rulers within archaeological contexts and highlights structures of connectivity, clustering, and diversity in coin circulation.
The second example focuses on a GIS visualization of coin finds located beyond the political borders of the Byzantine Empire. By mapping these “beyond-border” finds, the analysis explores how Byzantine coins circulated across long-distance exchange networks and frontier zones.
These examples demonstrate that the essential prerequisite for such analyses is the existence of large, structured datasets stored in digital research databases such as NOMISMATA. Without the systematic aggregation of archaeological data, neither large-scale visualization nor computational analysis would be possible. Once datasets reach this scale, however, their complexity becomes difficult to interpret intuitively. At this point, artificial intelligence can serve as a heuristic tool, helping scholars identify patterns, formulate hypotheses, and navigate complex relational and spatial structures.
The paper therefore argues that the combination of large digital databases and AI-assisted interpretation offers a promising methodological framework for the future study of Byzantine coin circulation.

26. The Numismatic Collection of the Institute of Archaeology in Tirana
Anisa Buzo (Institute of Archaeology, Academy of Sciences of Albania)

The Numismatic Cabinet of the Institute of Archaeology, Academy of Sciences of Albania, in Tirana preserves an important collection of approximately 40,000 coins discovered in the territory of Albania. The formation of this collection is closely related to archaeological research carried out in Albania during the first half of the twentieth century. A part of the material derives from archaeological excavations conducted by Luigi Maria Ugolini in the ancient cities of Phoinike and Butrint (1924–1927), as well as those carried out by Léon Rey at Apollonia (1923–1936). Additional coins originate from religious institutions and private collections before World War II.
The development of Albanian numismatics is closely linked with the name of Hasan Ceka, who established the first institutional numismatic collection within the Museum of Sciences in 1948. His work was followed by prof. Shpresa Gjongecaj, whose research focused particularly on Hellenistic coinage.
The Numismatic Cabinet holds a collection of coins with strong scientific potential. While the ancient (especially Hellenistic) material has been studied and published, several medieval hoards are currently under study, the Cabinet preserves a large group of Roman Republican and Imperial coins that remain unpublished and insufficiently studied.
This paper presents an overview of the collection through the categorization of coins according to chronological periods, materials, and geographical distribution. The coins range from the Hellenistic to the modern period and originate from different regions of Albania. Beyond their scientific value, the collection also represents an important resource for communicating Albania's numismatic heritage to the public through museum exhibitions, research publications, and future digital initiatives. At the same time, the Cabinet continues to grow through archaeological excavations across the country, which regularly contributes new coin finds and hoards.

Friday 18 September – Session 6: Public Outreach and Communication

27. The University of Milan's coin collection and the challenges of digitalizing numismatic heritage in Italy
Alessandro Cavagna (University of Milan)
Alessandro Minola (University of Milan)

In the 1970s, with the patronage of the "Istituto di Storia Antica" of the University of Milan, professor Ernesto Bernareggi - driven by a commitment to object-based learning that aimed to bridge the gap between students and the physical objects of their study – began assembling a coin collection that today comprises nearly 500 specimens. The defining feature of this small collection is its variety, which unfolds in two directions: the denominations, diversified by metal and size, allow to define the economic function and the purposes of ancient coinage; at the same time, the typological varieties and the diverse geographical provenance of the coins enable an approach to the ancient world from a multitude of perspectives.
Over the decades, the collection has been used for the very purpose for which it was assembled; most recently, between 2021 and 2024, the teaching workshop "LabNum: building a digital numismatic museum" was organized. The title of this workshop reflects the precise objective that the Chair of Ancient Numismatics intends to pursue in the near future. The

digitalization of the University's coin collection presents several logistical and methodological challenges, particularly within the Italian context which still lacks robust infrastructure and established benchmarks, as the digitalization of numismatic heritage - across both national and civic museums and the rare university collections of this kind - is still in its infancy.
Drawing upon international best practices of digitalization in the field of numismatics, this paper seeks to establish some "guidelines" for an effective digitalization. It proposes a model that begins with educational practice and culminates in the development of content that is accessible to both academic specialists and the wider public.

28. Digitising Ancient Coinage at the Ashmolean Museum: The DigiClass Project, its Challenges and Opportunities
Marcus Spencer-Brown (Ashmolean Museum, University of Oxford)

DigiClass is a major digital cataloguing project at the Ashmolean Museum, University of Oxford, supported by the generous funding of Mr Mark Haworth. A dedicated team of five numismatists is digitising one of the world's most significant public collections of ancient Greek and Roman coinage. Housed in the Heberden Coin Room, the collection comprises approximately 160,000 objects, with origins in the seventeenth century and a complex history of acquisition, including college collections, local finds, and important bequests from scholar-collectors such as Sir Arthur Evans and Sir Edward (Stanley) Robinson.
By its completion in 2031, DigiClass will provide full public access to the collection via a dedicated online database (hcr.ashmus.ox.ac.uk). Individual records will also be integrated, where possible, with other major numismatic resources, including Roman Provincial Coinage Online, IRIS (Greek coinage typology), ARCH, CRRO, and OCRE. This work will significantly enhance the visibility and research potential of the Ashmolean holdings.
This paper has two aims. First, it will outline the project's structure, workflow, and progress, with particular attention to the methods which have enabled large-scale digitisation at speed. It will highlight the rapid transformation of a historically under-digitised collection into a highly accessible digital resource. Second, it will examine key challenges and opportunities encountered during the project's first eighteen months of operation. This will include consideration of the benefits of initiating mass digitisation relatively recently—allowing the adoption of established standards and lessons from comparable projects—alongside the constraints posed by legacy systems and dealing with accumulated 'technical debt'.

29. From the darkness of the kidnapping to the light of the data: narrating the numismatic heritage between archaeology and legality
Caterina Annese (Ministry of Culture)
Elena Dellù (Ministry of Culture)
Stefania Montanaro (Ministry of Culture)
Francesca Romana Paolillo (Ministry of Culture)

What differentiates a coin that "speaks" from one condemned to silence? The numismatic heritage managed by the ABAP Superintendency for the metropolitan city of Bari offers a privileged observatory on two mirror images: the excavation coin, a cornerstone of historical reconstruction thanks to the preservation of its stratigraphic context, and the confiscation or spontaneous delivery coin, often rendered "silent" because it was uprooted from its original bed by illicit activities.
The paper analyzes how the challenge of valorization and communication can bridge this gap,

transforming the decontextualized find into a powerful manifesto of legality and active citizenship.
In this scenario, digitalization and the adoption of cutting-edge information systems represent not the ultimate goal, but the essential technical means to restore scientific dignity and visibility to thousands of specimens that would otherwise remain confined to oblivion. The integration of data into digital platforms allows us to mend the connections between dispersed finds, transforming raw data into an accessible narrative, capable of making the complexity of the numismatic record understandable to the general public.
The constant synergy between institutions emerges as the fundamental driver for this mission of civil redemption. The aim of the intervention is to show how the dissemination of the results of protection can generate a new, profound collective sensitivity.
By presenting asset recovery not as a mere judicial procedure, but as a painful victory for historical memory over dispersion, the Superintendency aims to transform every citizen into a conscious guardian of their territory. The story of the "homecoming" of these coins, finally freed from invisibility, thus becomes an opportunity for cultural redemption, promoting a social consciousness in which numismatic heritage is finally perceived as a precious common good, to be protected, studied, and proudly passed down to future generations

30. Communicating the Numismatic Finds of Deultum through the DigiDeultum Project
Lily Grozdanova (Sofia University "St. Kliment Ohridski")
Dilyana Boteva-Boyanova (Sofia University "St. Kliment Ohridski")

The project BNSF КП-06-Н80/7 (08.12.2023) “Upgrading the Historical Narrative: From Deultum to DigiDeultum” poses the fundamental question: Has digital humanities, particularly the study of Antiquity, reached the level of synthesising new research directions, methods, and ultimately – upgraded knowledge? Moreover, the project aims to experiment with interdisciplinary approaches not only in the research but also in the dissemination of scientific information and the results generated during the project, incorporating data gathered over more than 40 years of archaeological study on the site of the Roman colony of Deultum in the province of Thrace.
The current presentation focuses on the project’s activities to reinterpret the rich and diverse numismatic material of Deultum through innovative methods. It centers around the efforts to directly implement numismatic artifacts in practical experimental events and workshops like SNS 2025, a concept designed to demonstrate its practical relevance and to inspire the scientific and broader audiences to see the value in interdisciplinary dissemination practices.
This contribution will also present the level of development of the concept for an online digital numismatic exhibition of the Deultum materials. The goal is to create a platform that not only popularises key materials and offers an interactive, flexible digital extension of the onsite museum, but also serves as a scholarly resource for joint international thematic exhibitions and research collaborations.

31. The Contessa Entellina Hoard (IGCH 2119): Archival Documents, Discovery Data, and Digital Valorisation
Lavinia Sole (University of Palermo)

The Contessa Entellina hoard (IGCH 2119), buried at the beginning of the fourth century BC, represents one of the most significant numismatic hoard from Sicily. The assemblage consists of 113 silver tetradrachms primarily minted in Siceliote poleis, but also includes issues from

Punic and Elymian centres, Siculo-Punic series struck in the name of Carthage, and coinage from Rhegion, Athens, and Leucas. Although individual specimens have frequently been subject to analysis within numismatic corpora dedicated to specific series, a comprehensive study examining the assemblage and its original archaeological context has hitherto been lacking. The present paper, therefore, aims to address this lacuna by detailing the composition of the hoard and accurately reconstructing the stages of its discovery through archival data held at the "A. Salinas" Regional Archaeological Museum in Palermo, where the treasure is preserved. Finally, the study will analyse recent strategies for the digital valorisation of the hoard implemented via the NUMMI DIGITALI portal.

32. Bringing coins to the people: a public outreach case study within the UK education sector

Clare Rowan (University of Warwick)

This paper presents a variety of strategies that have been successfully employed for public engagement and education outreach in the last few years at the University of Warwick. Most coins, and especially most coin finds, are not necessarily 'attractive' at first glance, and can be bewildering to decipher for the non-specialist. In the case of some objects, like lead tokens, it is also impossible to offer handling sessions or close interaction due to their fragile (or indeed poisonous) nature. It can thus be challenging to engage people with objects that are small and not necessarily made of gold and silver.

At Warwick a variety of digital approaches have been employed to overcome issues posed by small unattractive coins, and to generate public interest in ancient coinage. Videos targeted at particular school cohorts have been a successful and relatively easy way to engage one sector of the public with numismatic objects. Laser scanning and photogrammetry of coinage and tokens has also enabled the creation of an online interactive 'handling' experience on Sketchfab; although nothing can replace handling a genuine ancient artefact, this approach allows people who may never have the opportunity to handle an ancient coin a free interactive experience, and allows a form of coin handling at scale (not possible in museums themselves). When combined with virtual reality technology, these 3D models also enable a VR object handling experience, as well as the creation of VR exhibitions (e.g. the recent exhibition created by Warwick university students, 'Veni, Vidi, VR'), which provide an engagement 'hook' for those who may not be interested in coinage, but in the technology itself. 3D printing has also enabled the creation of collection boxes to be shipped to schools, which in turn has generated further creativity from the school students themselves.

33. Numismatics as a theory free discipline? Cross disciplinary approaches to teaching with coins at the University of Leeds

Lucy Moore (University of Leeds)

In their 2011 paper 'Rethinking Numismatics' Kemmers and Myrberg (2011, 104) called for numismatists to "reap the benefits of current archaeological theory" and to re-embed the discipline within its archaeological origins. However, it is not just archaeological theory that can support new avenues of numismatic enquiry, but a range of fields.

To experiment with these frames of thinking, in March 2026 Cultural Collections at the University of Leeds ran a pedagogical research project to explore how a range of theoretical positions can be applied to numismatic collections. The aim was to better understand how theoretical approaches could be applied to this under-used collection and what impact this

may have on undergraduate students. This scheme, entitled Krater, ran four experimental workshops that applied approaches from film theory, ecocriticism, gender studies and philosophy to find new ways of exploring the collection. This paper will describe two of the approaches most valued by undergraduate students, as well as how this was adapted as a resource to engage online visitors. It argues that coins are ideal vehicles for applying theoretical ideas due to the interdisciplinary skills that are always required to understand them.

POSTER ABSTRACTS

Poster session 1 – Coin Finds

1. Coin Finds from Canusium: Archaeological Evidence and Digital Integration

Riccardo Gabriele Alfieri (University of Bari Aldo Moro, University of Foggia)

This poster deals with an overview of the ongoing numismatic research stemming from recent archaeological investigations in the ancient city of Canusium. The study focuses on analyzing key numismatic contexts to better understand the economic and historical landscape of the site.
Specifically, the presentation will highlight two major areas of focus. First, it will examine the coin assemblages recovered from the archaeological complex of San Pietro, providing insights into the circulation and use of currency within this specific area. Then, the poster will present the significant numismatic findings originating from the hypogea of Lamapopoli in Canosa. The information concerning the coins from the Lamapopoli hypogea has been systematically cataloged and are now published on the FLAME (Framing the Late Antique and Early Medieval Economy) database with the aim of also contributing to AND (Apulian Numismatic Database) database set up by the University of Bari. By presenting these combined datasets, the poster aims to contribute to the broader understanding of monetary circulation in Canosa and demonstrate the value of integrating regional archaeological findings into major international digital humanities projects.

2. The Central Coin Hoard Archive of the Free State of Saxony

Stefanie Baars (Staatliche Kunstsammlungen Dresden – Münzkabinett)

Saxony is a land that is rich of coin hoards. In 1994, in collaboration with the Landesamt für Archäologie Sachsen, the Central Coin Hoard Archive of the Free State of Saxony was established in the Coin Cabinet Dresden for the purpose of preserving all coin hoards in a complete state. It currently comprises more than 25,000 specimens. The coins are identified, studied, and published and are regularly displayed in permanent and special exhibitions in Saxony.
Among the most famous hoards are, for example, the significant bracteate find from Lichtenau in 1985 (burial ca. 1265) or the gold find of coins and medals discovered in a latrine at Leipzig University in 1999 (burial 1668). One of the highlights of 2025 was the discovery of a “Rainbow Cup” near Leipzig. The find of this Celtic coin provides interesting information about ancient trade connections in Saxony.
The old corpus of finds in Saxony (18^{th}-20^{th} cent.) is listed in the Kenom database, the recent finds are entered in the database “DAPHNE” of the Dresden State Art Collections. In the future, plans are in place to improve data exchange between the Coin Cabinet and Landesamt databases and Kenom, with a view further strengthening the collaboration.

3. From When to Where: A Spatial Perspective on Coin Finds in Archaeological Contexts
Letizia Fazi (Sapienza University of Rome)

This paper proposes a methodological approach for the study of coin finds based on the integration of quantitative analysis and GIS tools, with the aim of investigating their spatial distribution within archaeological contexts. The approach complements traditional numismatic analyses by integrating a spatial perspective into the study of coins as archaeological finds.
Through the structuring of a normalized database and the use of spatial queries and analytical tools, the analysis seeks to identify patterns of concentration and associations between coin finds and their archaeological contexts. Data normalization plays a key role in ensuring internal consistency and enabling the comparison of heterogeneous datasets originating from different excavation and recording practices. Particular attention is given to the capacity of GIS to integrate multiple layers of information and to support multi-scalar visualization, from broader spatial distributions to fine-grained contextual relationships. This facilitates the visualization of spatial correlations and the exploration of functional associations between areas of coin loss and specific uses of space.
Within this framework, GIS functions not only as an analytical tool, but also as an environment for data management, analysis, and visualization.
This framework is applied to the coin finds from Gortyna (Crete) as a case study, discussing the potentials and limitations of the proposed approach and evaluating its applicability and replicability across different archaeological contexts.

4. Mapping coin finds in Central Apulia: A project in progress
Anthea Martinelli (University of Bari Aldo Moro, University of Foggia)

The research project concerns the systematic census of coin finds in archaeological sites of central Apulia, including hoards and single/multiple finds, known from scientific publications and repertoires of reference. The area of investigation is delimited to the south by the territory of Salento, already under study, and to the north by the Daunian sub-region.
The research is being carried out through the collection, critical review and systematization of published data related to a wide chronological span from the Greek Age – with specific concern for emissions of Magna Graecia poleis – and the Middle Ages, aiming at developing an organic description of the spatial-chronological distribution of numismatic documentation in central Apulia.
The first phase of this project focuses on the identification and the description of coin hoards, sourcing data from repertoires and integrating them with the further information recorded in the most recent publications, in order to update and complete the context of the numismatic evidence.
The second phase requires the collection and the description of other coin finds, with particular attention to single or associated discoveries. For each case, if possible, the potential deposition/association with other classes of materials from the same stratigraphic context is reported.
Both phases are preparatory to the elaboration of two types of descriptive files, diversified according to the nature of finds. The purpose is the standardization and the comparability of the data collected. The expected results include the development of a structured repertoire and of a standardized database that is easily searchable, implementable in digital format, and useful for diachronic analysis of the evolution of monetary circulation and of practices of use,

accumulation and loss of coins, as well as for numismatic and archaeological researches on central Apulia, whose documentation on coin finds is currently fragmentary and limited, with a synthesis concerning only the Peucetian territory.

5. Dutch developments
Jan Pelsdonk (Rijksmuseum / Teylers Museum)

In the autumn of 2024, the ECFN visited Teylers Museum in Haarlem, the Netherlands. During the tour following the annual meeting on a rather cold November day, the visitors searched for Roman traces in the landscape surrounding the Roman Limes. In a land of clay, where every stone was literally brought in from abroad and the Romans worked extensively with wood, archaeological finds are frequently limited to traces in the earth: discolorations where wooden posts once stood in the ground. Nevertheless, at the National Museum of Antiquities in Leiden, visitors saw that beautiful finds have been made. Tens of thousands of discovered coins are also known, although these often remain invisible to international research due to a lack of understanding of the importance of international cooperation through ECFN and Nomisma. This latter point was reason enough to organize the ECFN meeting in the Netherlands, in the hope of attracting more attention to the development of digital numismatics. During this lecture, I will provide an update on the status of the development currently taking place in the Netherlands.

6. Byzantine Coin Finds Beyond the Empire: Digital Data and New Evidence from Ukraine
Kateryna Sorochan (University of Trieste)

This study introduces a new geo- and chrono-referenced dataset of Byzantine coin finds from Eastern Europe, with a particular focus on the territory of present-day Ukraine.
It enables a systematic analysis of Byzantine coin circulation beyond the borders of the Byzantine Empire (498–1453), with particular attention to the routes and mechanisms through which coins reached Kyivan Rus'.
The dataset is based primarily on archaeological publications in Ukrainian and Russian that have remained largely inaccessible to the international research community.
It fills a gap of more than 60 years in systematised numismatic data since the last comprehensive study of Byzantine coin finds in the territory of the former USSR, published in 1962. The object of this study comprises Byzantine coins - primarily solidi, nomismata, miliaresia, folles, and their imitations - recorded as single finds, grave goods, or hoards.
Each record is structured through more than 45 parameters, including denomination, chronological attribution, TPQ, mint, emperor, weight, diameter, provenance, and full bibliographic references. The data are processed using digital methods of data standardisation and georeferencing, enabling spatial querying, comparative analysis, and integration with external numismatic infrastructures. Particular emphasis is placed on the precise geolocation of finds using standardized modern English-language toponyms of Ukrainian locations.
As a Digital Humanities project, the dataset is designed for interoperability and integration into the NOMISMATA platform, enabling advanced data reuse, cross-database linking, and spatial analysis within a broader digital numismatic ecosystem. The project contributes to both the preservation of cultural heritage and the integration of Ukrainian scholarship into global Byzantine and numismatic studies.

7. The Capitoline Coin Cabinet: Cataloguing, Enhancing, and Communicating the Collections

Maria Cristina Molinari (Capitoline Museums – Coin Cabinet)
Claudia Ferro (Capitoline Museums – Coin Cabinet)

The Capitoline Coin Cabinet, established in 1872, preserves coins, medals, engraved precious stones and jewellery belonging to the assets of the Municipality of Rome. Such materials come from important individual collections (Castellani, Stanzani, Bignami, Campana, Orsini, Martinetti), together with finds, mainly recovered from the urban subsoil, dating from 1870 to the early twentieth century.
The need to develop effective strategies aimed at the protection and enhancement of the materials pertaining to the numismatic section has led to the renewal of the filing interface by means of the capitolini.net platform, through which approximately 14,000 items have currently been inventoried.
Furthermore, between 2022 and 2025, thanks to the funds provided by the Regione Lazio for regional cultural services and valorisation initiatives, the installation of two interactive totems has made the communication to the public more effective. Through a pathway-based navigation structure, these devices illustrate the history of the Capitoline Coin Cabinet and of modern and contemporary Rome.
Within each section, users can approach every single object in depth, as relevant data, provenance, and bibliographic references are provided. The display also includes a dedicated focus on Roman Republican coinage, minting techniques, and Rome's economic transformations.

8. Digital corpus of coin inscriptions from pre-Roman Sicily: A database for numismatic epigraphy

Mariangela Puglisi (University of Messina)
Sara Quartarone (University of Messina)

The numismatic databases currently available online — repertories of collections or of Greek coin types such as *IRIS, CN*, and others — do not systematically address coin inscriptions and their variants, proving insufficient for the needs of a structured epigraphic corpus. Building on a census already underway and nearly complete for coin legends in Greek and Elymian alphabets from Sicily, this project aims to produce a database of coin inscriptions from pre-Roman Sicily, founded on a normalised structure capable of meeting the methodological requirements of both numismatic and philological analysis.
The tool will be developed in TEI-XML following the EpiDoc guidelines, with the goal of creating an open access resource interoperable with existing complementary projects, foremost among them I-Sicily, the epigraphic corpus of inscriptions on stone from Greek and Roman Sicily. For each coin inscription, the structured metadata will include: the language and alphabetic system, the semantic category of the legend (ethnic, toponym, anthroponym/personal name, theonym/divine name, and others), morphological features (specifically case and number), positioning within the coin field of the two sides of the coin, the issuing mint, the period and denomination of attestation, links to online catalogues with photographic reproductions, cross-references to inscriptions on other

supports, and specific bibliographic references. The standardisation of numismatic data is ensured through alignment with the ontologies of nomisma.org via the NUDS standard, thereby guaranteeing compatibility with the leading projects in digital numismatics.
A defining methodological choice of the project is the explicit separation between objective data and interpretative proposals: translations and expansions of abbreviated forms will be clearly distinguished from established facts. The corpus is conceived as an open, incrementally expandable tool, designed to reduce the time and effort involved in gathering research materials, while offering the scholarly community shared foundations on which to broaden and continue research in a field that remains largely underexplored.

9. SICF goes DISCO – an update
Rahel C. Ackermann (Swiss Inventory of Coin Finds (SICF))
Fanny Puthod (Swiss Inventory of Coin Finds (SICF))

The Swiss Inventory of Coin Finds (SICF) is transferring its data to DISCO – Digital Inventory of Swiss Coin Finds, a Dédalo application. Work in progress… We will present some of the obstacles we encountered and the status quo.

10. From Coins to Stories: Communicating the Drovetti Collection to Museum Visitors
Ludovico Scaglione (University of Bern)

Numismatic collections pose a significant challenge in museum communication: often perceived as highly technical and difficult to interpret, they risk remaining marginal within the visitor experience.
This contribution proposes a transferable communication model aimed at translating specialized numismatic research into an accessible, engaging, and scientifically rigorous narrative for a broader audience.
The study forms part of the final stage of a PhD project conducted in collaboration with the Museo Egizio and the Musei Reali di Torino, focusing on the numismatic component of the Egyptian collection that contributed to the formation of the Turin museum.
The paper is structured in five steps. First, it introduces the history of the collection and the figure of Bernardino Drovetti, situating visitors within the context of its formation. Second, it presents the composition of the collection, highlighting the diversity of specimens and their chronological and geographical framework.
The third and central step addresses the functional value of the coins. Through comparison with documentary sources such as papyri and economic texts from Roman Egypt, monetary denominations are translated into everyday life equivalents (prices, wages, services), making their purchasing power tangible and restoring their role as means of exchange.
The fourth step focuses on selected significant specimens, which become focal points within the narrative. Finally, the contribution proposes solutions for museum display based on thematic storytelling, layered interpretation, and the integration of visual and digital mediation tools.
The Drovetti Collection demonstrates a replicable approach to communicating numismatic materials, showing how their complexity can be addressed through structured narrative strategies that restore their historical meaning and cultural value.

11. Toward a Digital Dataset of Imperial Countermarks at the Ashmolean

Lauren Tomanelli (Ashmolean Museum, University of Oxford)

As online databases and research tools make numismatic data more accessible than ever, how can we ensure they remain engaging and dynamic resources?

This presentation discusses an effort to digitize Roman Imperial countermarks within the Ashmolean Museum's collection. Countermarks allow for study of coins beyond the moment of their minting. Like hoard data, findspots, and provenances, countermarks are an important part of a Roman coin's use-life. With layered temporal information such as this, we can empower scholars to study new questions: tracking the average longevity of a coin across emperors, testing preferential selection for continued use through countermarking, and so on. This presentation highlights the opportunity for digital databases to provide diachronically rich information in their records.

Imperial countermarks have not yet been comprehensively digitized or collected into a single typology. This preliminary stage of the project is a proof of concept, providing digital drawings of selected Imperial countermarks in the Ashmolean Museum's collection. Future work would include compiling the various publications on Imperial countermarks into a single typology and publishing these drawings on Nomisma.org.