ÖAW

Österreichisches Archäologisches Institut

The rapidly advancing field of generative Artificial Intelligence is opening new frontiers for research in the Humanities, including the study of the ancient world. In recent years, Large Language Models (LLMs) have achieved high performance across a wide range of natural language tasks, enabling complex engagement with texts and facilitating analysis of large archival collections. Some models now have multimodal capabilities, allowing them to process images and embedded text, including the decipherment of handwriting, expanding opportunities for research on historical documents. At the same time, these powerful tools present challenges, such as lack of transparency and the generation of plausible but inaccurate outputs. This event brings together scholars and students of AI, Digital Humanities, and the study of antiquity, to explore both the challenges and the new research opportunities offered by generative AI. The program will include a practical workshop and Q+A session with AI expert David Smith.

ORGANIZER

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ZOOM

https://oeaw-ac-at.zoom.us/j/61657326300?pwd=fHJSb3n6YTHOeJxEabrnCm1o8eozzk.1
Meeting ID: 616 5732 6300
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ÖAW Austrian Academy of Sciences

Austrian Archaeological Institute

International Workshop

Digital Frontiers

Artificial Intelligence and the Study of the Ancient World

universität wien

EurAsia
EURASIAN TRANSFORMATIONS

May 22nd, 2026
9:00–18:00

Austrian Academy of Sciences
Österreichische Postsparkasse
Conference Rooms 1–2, 3rd floor
Georg-Coch-Platz 2
1010 Vienna

Program

9:00

Introductory Remarks

Matthias Adelhofer/Michael Jursa, Assyriology, Uni Wien
AI and Cuneiform Data

Roman Gundacker, Egyptology/Philology, OeAW
Ancient Egyptian Meets Artificial Intelligence

Stefan Hagel, Ancient Music, OeAW
AI for Ancient Music?

10:00–10:30

Christina Kokkinia, Greek Epigraphy, National Hellenic Research Foundation, Athens
The View from Epigraphy: The Case for a United Workspace

Anna Dolganov, Papyrology, OeAW
LLMS for Historical Languages: A New Horizon for the Study of Ancient Documents

10:30–11:00

Coffee Break

11:00–12:00

Irene Forstner–Müller/Astrid Hassler, Egyptology/Archaeology, OeAW
Beyond SfM: An Open Challenge for AI in Reconstructing Egyptian Architecture

Christian Gugl, Archaeology, OeAW
From Field Database to FAIR Data: LLMs for Archaeological Software Development, Data Harvesting, and Documentation Processing

Dominik Hagmann, Archaeology, OeAW
Reflections on AI Applications in Austrian Roman Archaeology

Giuseppe Castellano, Numismatics, Uni Wien
The Application of Vision Language Models in the Numismatische Zentralkartei Digitization Project at the Department of Numismatics and Monetary History, University of Vienna

12:00–13:30

Lunch Break

13:30–14:45

Johannes Preiser-Kapeller, Byzantine Studies, OeAW
One Revolution Too Many, One Civil War Too Few? An Experiment in Generating Systematic Data on Instability Events in Ancient and Medieval Empires with the Help of LLMs

Hannes Fellner, Historical Linguistics, Uni Wien
Fragmented Pasts, Connected Models: AI and the Reconstruction of Tocharian

Ephrem Aboud Ishac, Syriac, OeAW/CEU
Bridging the Gaps: Public AI Models for Under-Resourced Syriac Scripts

Doris Vickers, Medieval and Neo-Latin, Uni Wien
Digital Heavens: AI methods for philology and star-mapping in Early Modern astronomy

Jan Odstrcilik, Medieval Studies, OeAW
How Long Will We Need Latin Palaeography? The State of Medieval Latin HTR

14:45–15:15

Coffee Break

15:15

Keynote and ACE AI Training Session

David Smith, Computer Science/AI, Northeastern University

Grading Without an Answer: Computational Thinking and Formative Evaluation

18:00

Conclusion

Abstracts

Assyriology

Matthias Adelhofer/Michael Jursa
AI and Cuneiform Data

We will present the multi-lingual text corpora transmitted in Cuneiform writing and their current state of digitalisation and refer to some ongoing AI-based DH projects in this field, highlighting the specific challenges that come with the Cuneiform script.

Numismatics

Giuseppe Castellano
The Application of Vision Language Models in the Numismatische Zentralkartei Digitization Project at the Department of Numismatics and Monetary History, University of Vienna

The Numismatische Zentralkartei (NZK) Digitization Project seeks to digitize and make publicly available the contents of our card file of circa 1.5 million index cards containing coin information, which until now has only been available for consultation in person at the Department of Numismatics. The sheer volume of the material renders this project particularly well-suited to Visual Language Model data extraction, as it would drastically reduce the time required for digitization. The cards will be quickly scanned using an automatic scanner, the data will be extracted, and student assistants, interns, and researchers will then check the AI results and where necessary correct them in the database.

Papyrology

Anna Dolganov
LLMS for Historical Languages: A New Horizon for the Study of Ancient Documents

I present ongoing work with Mistral AI to build domain-specific multimodal AI systems for historical languages, starting with the Apollo AI system for Ancient Greek. Among many exciting downstream tasks is a Vision-Language model to decipher hundreds of thousands of unread Greek papyri.

Historical Linguistics
Hannes Fellner

Fragmented Pasts, Connected Models: AI and the Reconstruction of Tocharian

The Comprehensive Edition of Tocharian Manuscripts (CEToM) integrates corpus linguistics, lexicography, paleography, and textual content analysis to model both the structure and transmission of Tocharian. It also explores how AI-based methods can enhance the reconstruction of fragmentary texts, scribal practices, linguistic systems, and the transmission of knowledge systems in an extinct Indo-European branch of the ancient Silk Road.

Egyptology/Archaeology

Irene Forstner–Müller/Astrid Hassler
Beyond SfM: An Open Challenge for AI in Reconstructing Egyptian Architecture

While SfM and related methods accurately document excavated remains, the reconstruction of ancient Egyptian architecture remains unresolved. We present this as an open challenge and invite collaboration to bridge this gap.

Archaeology

Christian Gugl
From Field Database to FAIR Data: LLMs for Archaeological Software Development, Data Harvesting, and Documentation Processing

This presentation explores how Large Language Models are integrated into the workflow of the Digital Archaeology and Classics (DAC) department, spanning rapid prototyping of open-source research tools through natural language-driven development, automated extraction and transformation of legacy and web-based data into FAIR-compliant formats, and AI-assisted processing of existing excavation databases—deriving machine-readable JSON structures and formalizing stratigraphic graphs including Harris Matrix representations.

Egyptology/Philology

Roman Gundacker
Ancient Egyptian Meets Artificial Intelligence

Ancient Egyptian is attested across more than five millennia in five distinct linguistic stages and five different scripts. The structure of the language, the principles of the writing system(s), and a series of hotly debated fundamental issues (from grammar to morphology and phonology), but also long-standing Egyptological idiosyncrasies (e.g. a multitude of transliteration systems) characterise – and hinder – data assessment and research. Any engagement of digital research tools and Artificial Intelligence will have to grapple with this heavy burden of analogue difficulties.

Ancient Music

Stefan Hagel
AI for Ancient Music?

I discuss whether current models show useful insight into technical fundamentals of ancient music and how their capabilities might be exploited in the future.

Archaeology

Dominik Hagmann
Reflections on AI Applications in Austrian Roman Archaeology

The talk tries to explore the growing integration of AI in Austrian Roman archaeology, assessing its efficacy in optimizing tasks ranging from individual artifact analysis to superordinate landscape studies. By looking at current digital applications, the presentation highlights methodological advancements and the future potential of utilizing AI to interpret Roman material culture at the fringes of the Empire.

Syriac

Ephrem Aboud Ishac
Bridging the Gaps: Public AI Models for Under-Resourced Syriac Scripts

This presentation will outline our current work training custom Handwritten Text Recognition (HTR) models for various complex Syriac scripts, as well as the unique upcoming challenge of modeling Garshuni (Arabic written in Syriac script). It will demonstrate how these AI-generated transcriptions are being used to build a searchable liturgical corpus, thereby enabling us to computationally identify and reunite scattered, unidentified manuscript fragments.

Greek Epigraphy

Christina Kokkinia
The View from Epigraphy: The Case for a United Workspace

An assessment from the standpoint of Greek epigraphy of the fragmented state of digital resources in the field, of previous attempts at integration, and why AI now makes possible what scholarship has always needed: a single, open workspace spanning the written traditions.

Medieval studies

Jan Odstrcilik
How Long will We Need Latin Palaeography? The State of Medieval Latin HTR

Handwritten Text Recognition promises to solve the lack of transcriptions for medieval Latin sources, but how soon? This presentation provides an overview of the best current technological solutions and their limitations, while discussing key methodological challenges.

Byzantine Studies

Johannes Preiser-Kapeller
One Revolution Too Many, One Civil War Too Few? An Experiment in Generating Systematic Data on Instability Events in Ancient and Medieval Empires with the Help of LLMs

How can LLMs help to generate big systematically classified lists of historical events? The team of the Seshat Global History Databank at the Complexity Science Hub (Vienna) and the working group of the FWF project „Entangled Charters of Anatolia (1200-1300, ENCHANT)“ at the Austrian Academy of Science (OEAW) undertook such an experiment. The data generated based on the prompting of the Seshat team was evaluated by the expert historians at OEAW. The paper presents results and findings of this cooperation.

Computer Science/AI

David Smith
Grading Without an Answer Key: Computational Thinking and Formative Evaluation

Integrating computational models into our workflow is especially difficult in research, where we often don‘t know what the question is before we start. AI models rest on a foundation of large-scale evaluations for well-defined tasks, but you get what you measure. Fortunately, we can historicise many of our information sources, modeling what machine learning calls the data generating process. I will talk about examples of work in our lab, and we will talk through evaluation and modeling exercises inspired by workshop participants.

Medieval and Neo-Latin

Doris Vickers

Digital Heavens: AI Methods for Philology and Star-Mapping in Early Modern Astronomy

This presentation outlines my ongoing research into using AI to bridge Early Modern philology and digital astronomy. I will discuss the challenges of parsing technical Neo-Latin and present my current project: using computer vision to identify star positions in historical charts to create accurate, georeferenced „Sky Cultures“ for Stellarium.