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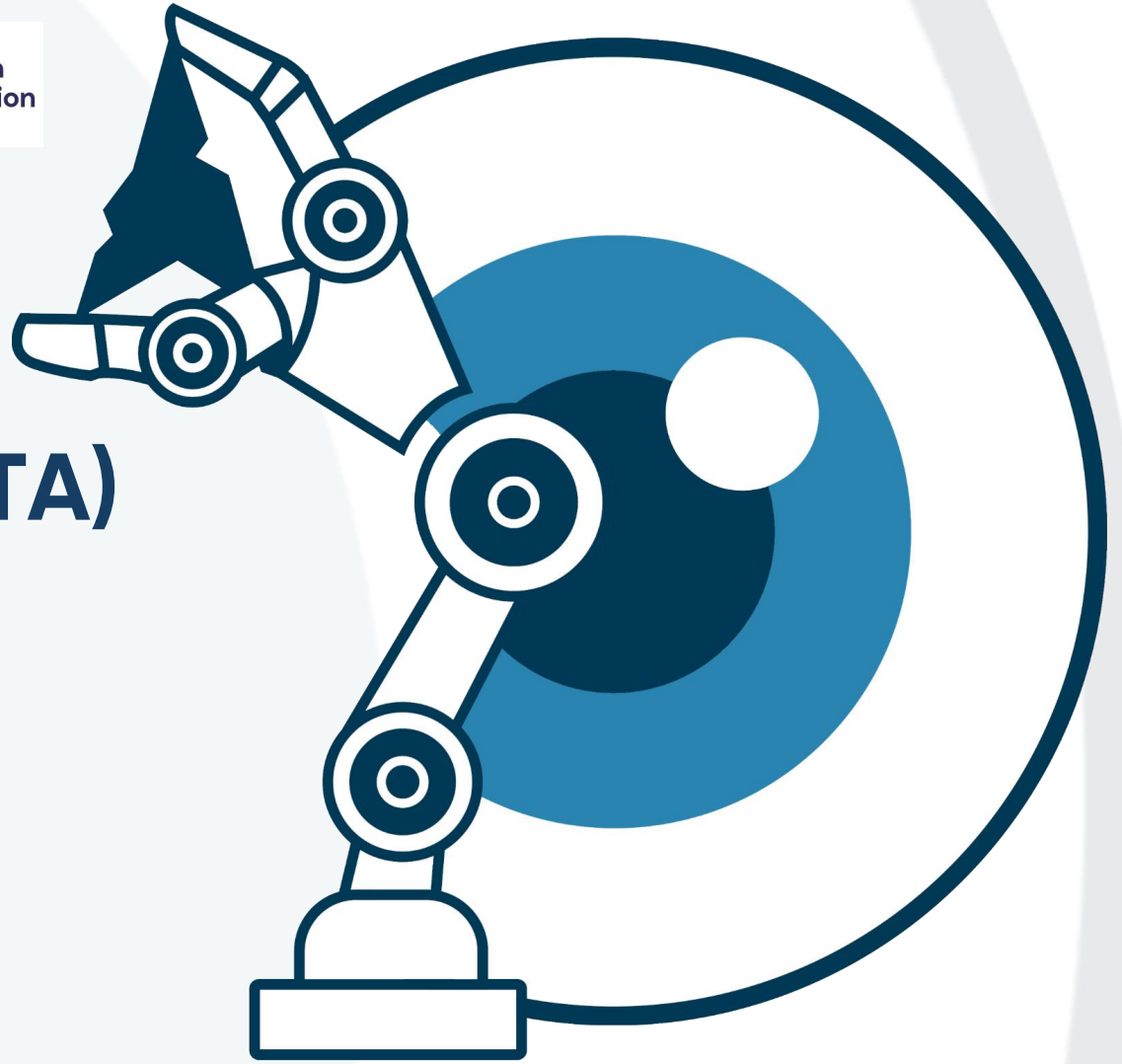

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User case scenarios

Nevio Dubbini, Miningful srls, Pisa, Italy

Athens, 5 May 2025
WORKSHOP: Opportunities and Tools from the Cultural Heritage Cloud for Digital Archaeology

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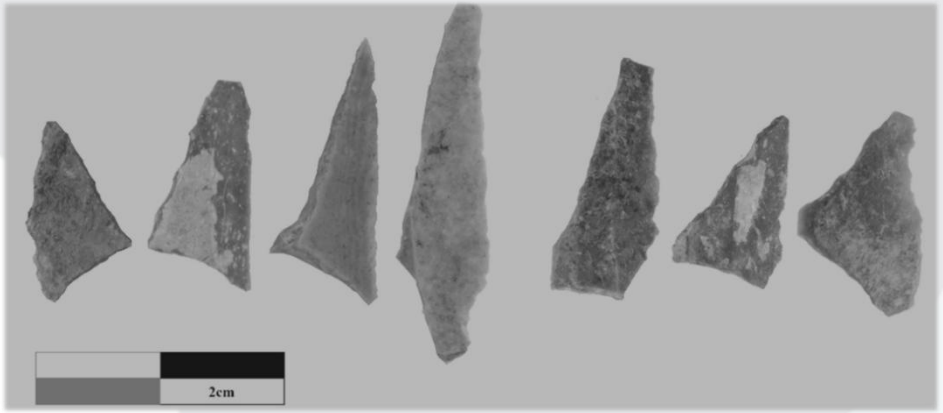
“IN THE BEGINNING WAS DATA...”

"DATA"



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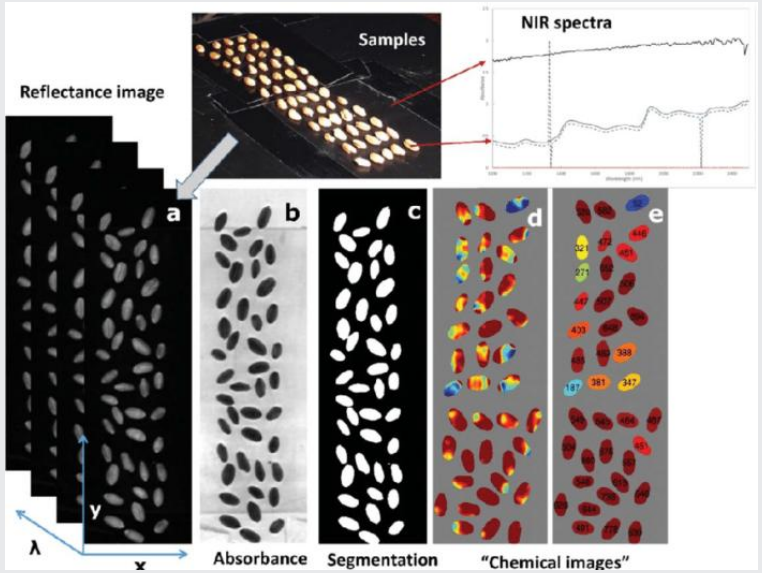
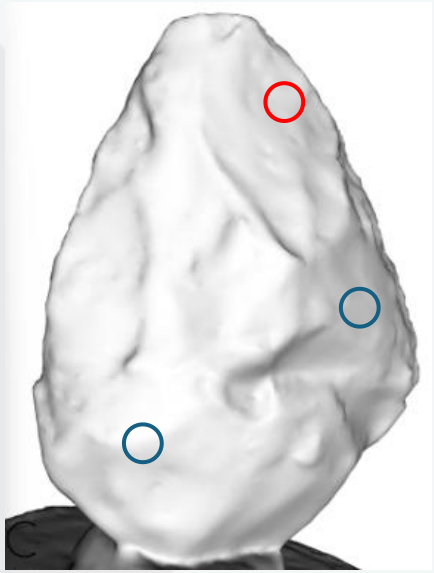
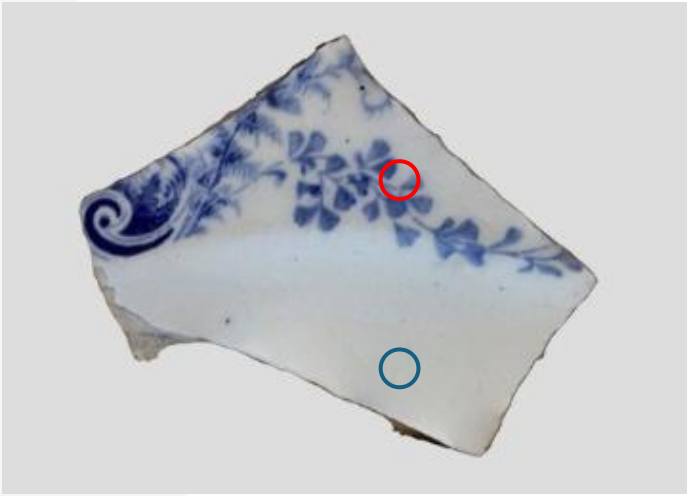
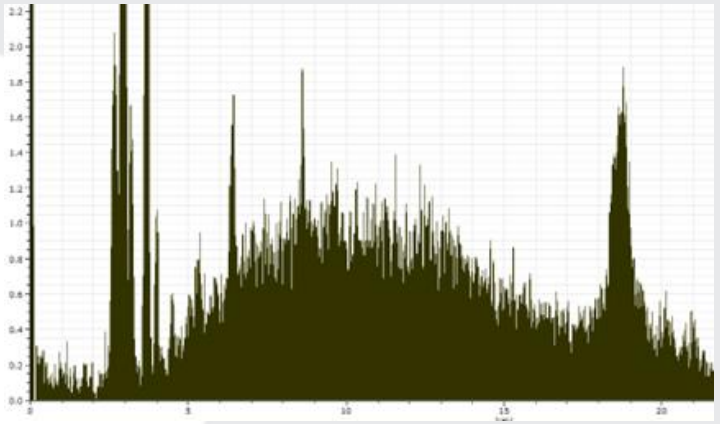
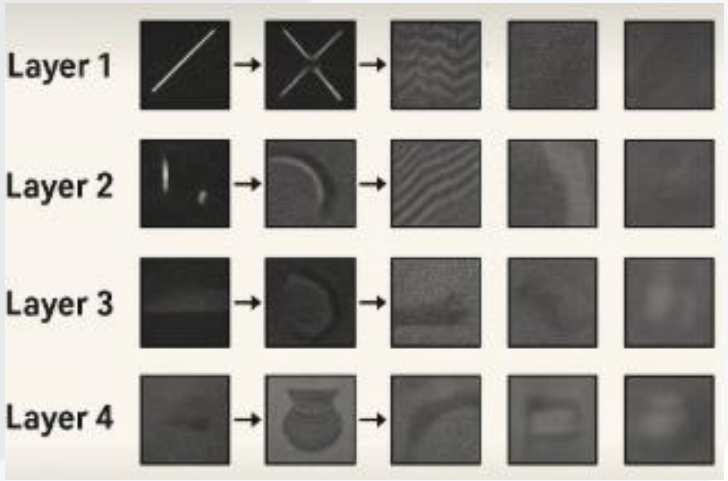
DATA!

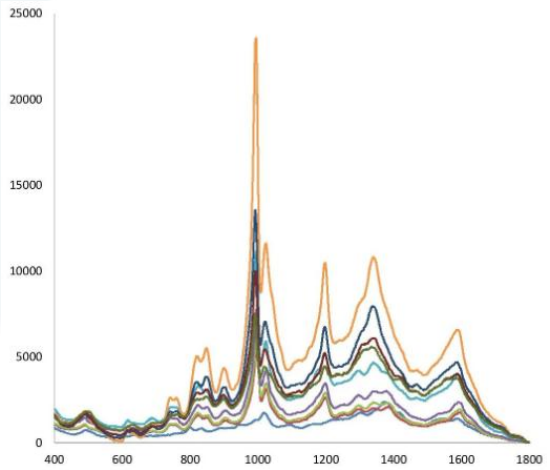












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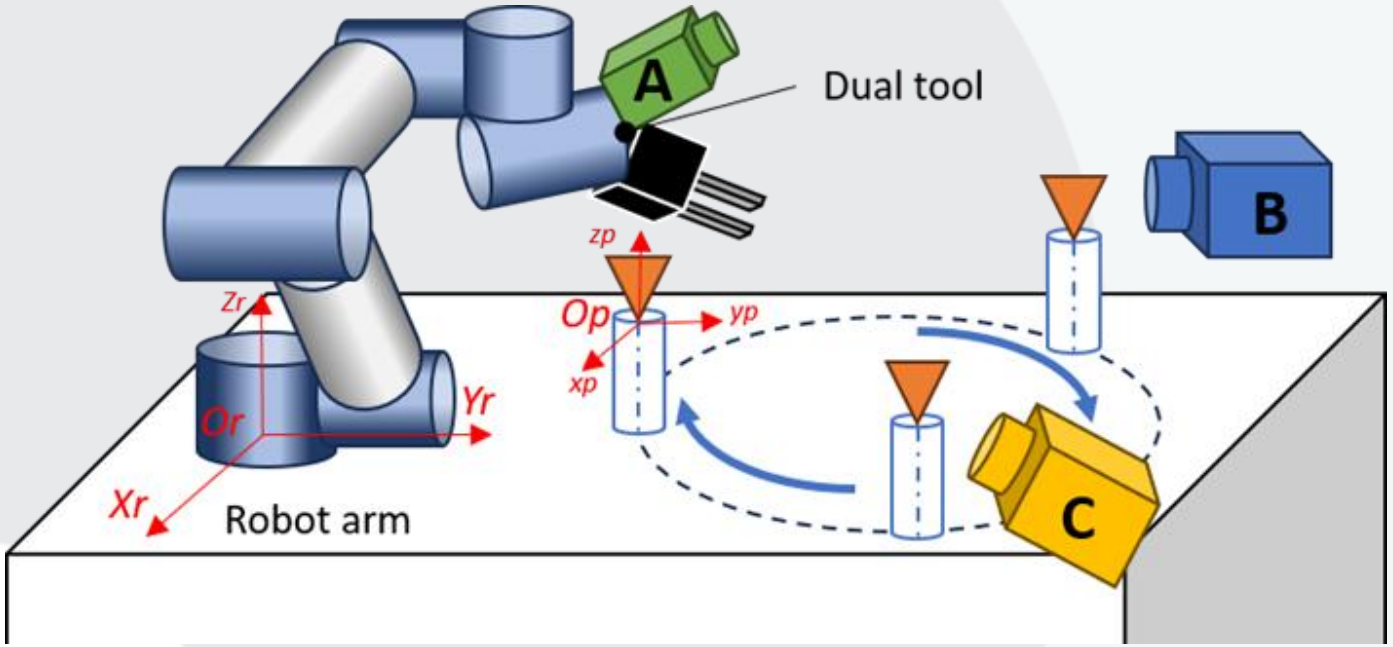
ROBOTIC WORK CELL



- Quick assembly and disassembly for practical use
- Foldable or collapsible components, reducing transportation bulk Lightweight materials, for high portability
- Open source architecture for affordability and customisation

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PIPELINE

POTTERY

Pottery type (based on technology)	3D model	HSI
Uncoated refined ware	x	x
Uncoated coarse ware	x	x
Slipped ware	x	x
Painted ware	x	x
Glazed ware	x	x
Slipped and glazed ware	x	x
Slipped, painted and glazed ware	x	x
Tin-glazed ware	x	x

Basic screening data to be collected for every object (no morphological limitations)

IF

- the spot is wide enough to cover the sensor
- the morphology of the artefact allows good adherence of the sensor
- there are no significant surface alterations

p-XRF on paste	p-XRF on coating	Raman spetr. on coating
x		
x		
x	x	
x	x	x
x	x	
x	x	
x	x	x
x	x	x

Specific analysis depending on sensors availability, pottery type and morphological limitations

LITHICS

Lithics type (based on materials)	3D model	HSI
All lithics	x	x

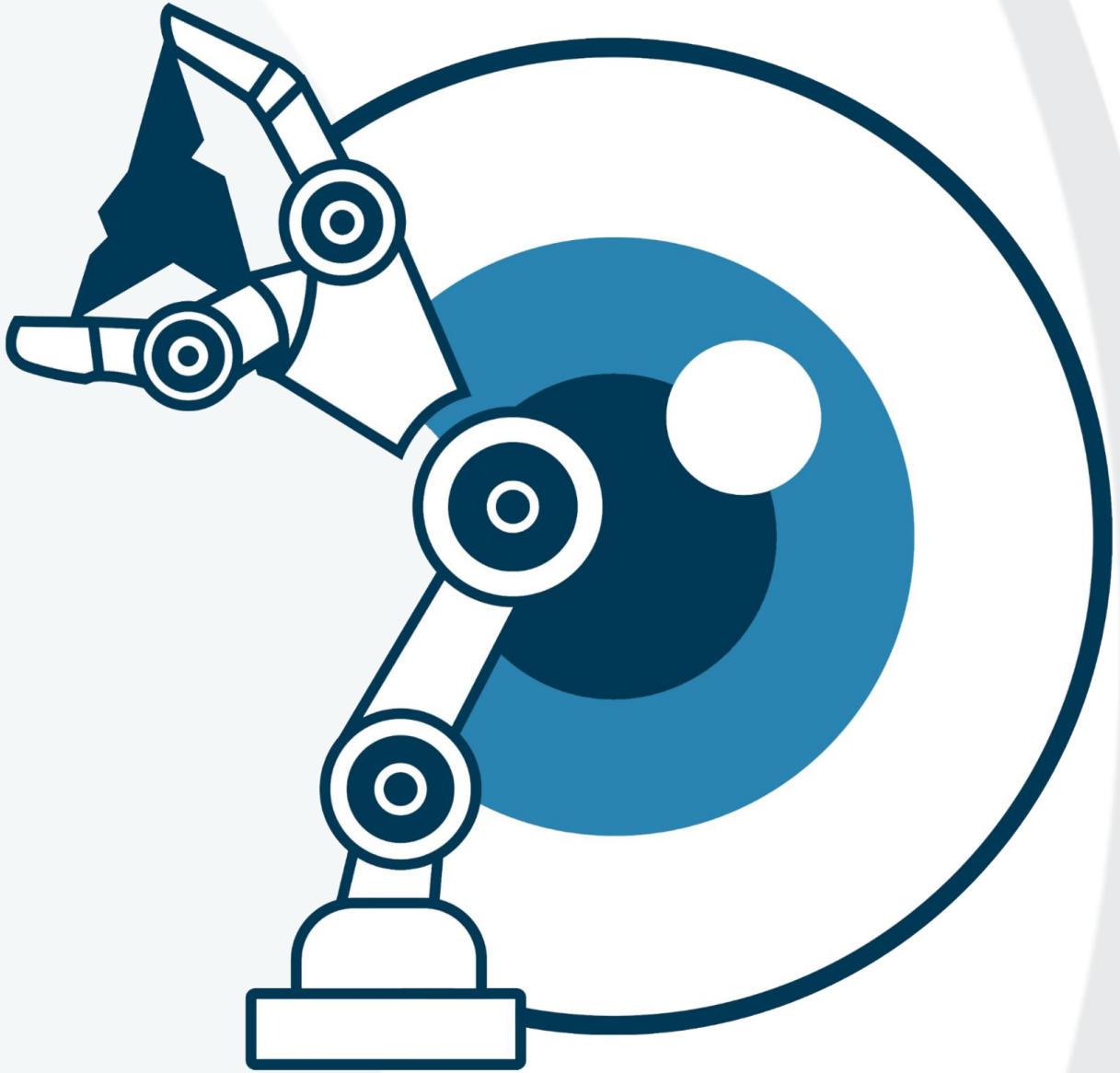
Basic screening data to be collected for every object (no morphological limitations)

IF

- the spot is wide enough to cover the sensor
- the morphology of the artefact allows good adherence of the sensor
- there are no significant surface alterations

p-XRF	Raman spectr.
x	x

Specific analysis depending on sensors availability and morphological limitations



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USE CASE SCENARIOS

1. Preventive archaeology context

- pottery assemblages from voluntary deposits
- lithic assemblages

2. Academic laboratory context

- Archaeological Lab at UNIPI
- The IIT- CCHT labs
- GRACPE group of UB
- Computational Archaeology Laboratory at HUJ

3. Museum context

- Laboratory of AMZ
- Museu d'Història de Barcelona

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CHALLENGES

- Portability, low-cost
- Automatize
  - intrument calibration, optimal viewpoints for artefact inspection, classification, clustering, continuous learning
- Digitisation time (< 5 min per artefact)
- Software coordination and integration
- UX

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Thank you!

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Università di Pisa · mappa · Dipartimento di Civiltà e Forme del Sapere · Université Bordeaux Montaigne · Archéosciences Bordeaux · Archeovision 3D Innovation for Cultural Heritage · Inrap Institut national de recherches archéologiques préventives

iit SoftBots Istituto Italiano di Tecnologia · University of York · King's College London · Universitat de Barcelona · האוניברסיטה העברית בירושלים The Hebrew University of Jerusalem الجامعة العبرية في أورشليم القدس · amz · Miningful · qb robotics · culturelab