INTRODUCTION

The 17th edition of ArcheoFOSS, held at the University of Turin in December 2023, was titled *Open Science and Archaeology: Archiving Knowledge* and emphasized the crucial role of Open Science practices in promoting transparency, data sharing, reproducibility and collaboration within the field of archaeology. This year's edition, continuing the approach introduced in 2022, featured panel sessions where experts shared their insights on specific topics and actively engaged in discussions with the audience. Panel proposals were invited from community members, scholars and professionals eager to explore innovative solutions and stimulate discussions on Open Science practices. These proposals were openly discussed on the Conference's GitHub repository, enabling early community feedback through a transparent, non-anonymous peer-review process.

During this 2-day Conference, over 80 participants from different countries had the opportunity to discuss and exchange ideas on open source software tools and methods covering a diverse array of topics organised in six thematic panels for a total of 32 presentations:

1. *Tools, Objectives, Users: State of Art and Future Perspectives on the Sharing of Open Data in Archaeology* (panelists: Valeria Boi and Mirella Serlorenzi). This panel addressed the current state and future possibilities for open data in archaeology. It explored how digital tools and platforms are being used to share archaeological data, with a focus on enhancing accessibility, collaboration and transparency. The discussion centered on the evolving needs of users – researchers, institutions and public – and the objectives of promoting broader data sharing to advance archaeological research and public engagement in the digital age.

2. *Archaeo.social: Archaeology in the Fediverse and the Future of Scholarly Social Media* (panelists: Joe Roe and Zack Batist). This panel explored how decentralized platforms like the Fediverse can transform scholarly communication in archaeology. It examined the potential for archaeologists to engage with peers and the public through these open, federated networks, promoting more inclusive, open dialogue. By moving away from traditional social media models, this panel highlighted how archaeology can benefit from the transparency, autonomy, and collaboration that platforms like Mastodon and others in the Fediverse offer.

3. *The Roadmap to Cooperation and Transparency: Fostering Open Science Solutions in Archaeology* (panelists: Alessio Palmisano and Andrea Titolo). This panel focused on how Open Science practices can promote greater

collaboration and transparency in archaeological research. It discussed the importance of creating frameworks and tools that enable researchers to share data and methodologies more openly. The panel also emphasized the role of cooperation between institutions, researchers and public stakeholders to ensure that archaeological knowledge becomes more accessible, verifiable and reusable, thereby fostering a more transparent and inclusive research environment.

4. *Virtual Reconstruction in Archaeology with FOSS Methods and Tools* (panelists: Emanuel Demetrescu and Simone Berto). This panel explored how Free and Open Source Software (FOSS) methods and tools are revolutionizing virtual reconstruction in archaeology. Presentations showcased various open source approaches for creating and analyzing 3D models of archaeological sites and artifacts. Topics included the use of photogrammetry, 3D scanning, and the data visualization techniques to reconstruct and interpret archaeological data. The discussion highlighted the benefits of using FOSS tools, such as cost-effectiveness, flexibility, and the ability to collaborate and share data openly.

5. *Small Finds: Comparing Methodologies and Techniques for the 3D Scanning of Small Objects* (panelists: Daniele Bursich and Dario Calomino). This panel showcased the transformative potential of open source technologies in the field of archaeology, particularly when applied to the delicate task of preserving and analyzing small artifacts. It also highlighted practical applications, challenges and future directions for integrating FOSS technologies into archaeological research.

6. *Data Integration and Communication Platforms/Bridging the Gap: Platforms for Public Archaeology and Storytelling* (panelists: Lucia Marsicano and Marco Montanari). This panel highlighted how platforms like Wikipedia, combined with collaborative digital initiatives, can significantly amplify public outreach in archaeology. By providing accessible and reliable information about archaeological sites and findings, such platforms help to promote cultural tourism. This digital visibility not only educates the public, but also drives engagement with historical sites, supporting their preservation and boosting local tourism economies.

The six panels were preceded by a plenary session featuring keynote speakers Chiara Bonacchi (University of Edinburgh), Elena Giglia (Open Science Unit, University of Turin), and Elena Maragoni (Wikimedia Italy). They addressed topics such as innovative methods for analyzing the politics of the past through big data from social media, the current landscape of Open Science practices in academia, and open community projects gained by Wikimedia Italy. The plenary session was followed by a roundtable discussion

on the use and reuse of images and digital content in heritage moderated by Marco Ciurcina, Stefano Costa, Emanuel Demetrescu, Piergiovanna Grossi, Anna Maria Marras and Augusto Palombini. This provided an excellent opportunity to discuss potential solutions and challenges regarding Decree No. 161, issued on April 11, 2023, which introduced guidelines by the Ministry of Culture for determining minimum fees for the use of images related to Italian cultural heritage.

The 17th edition of ArcheoFOSS concluded with a lively exchange of ideas, reflecting the growing importance of Open Science in shaping the future of archaeological research. Participants left with a deeper understanding of the benefits and challenges associated with adopting Open Science practices, from data sharing to public engagement through digital platforms. As the field continues to evolve, ArcheoFOSS remains a critical forum for fostering collaboration, innovation and transparency. The event reaffirmed the need for an ongoing dialogue between researchers, institutions and the public to ensure that archaeological knowledge remains accessible, verifiable, and reusable. With the groundwork laid during this Conference, the community looks forward to the continued growth of Open Science initiatives in archaeology, helping to democratize knowledge and bridge the gap between academia and the broader public.

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