Meet *kiara*: computationally enabled digital literacy software

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The Digital History Advanced Research Projects Accelerator project (DHARPA) (https://github.com/DHARPA-Project) at the Centre for Contemporary and Digital History (C^{2}DH, University of Luxembourg) proposes a workshop to explore how software can enable reflection on research processes in digital humanities, introducing participants to the project's data orchestration software, *kiara*. Whereas *kiara* incorporates several different digital research approaches such as data manipulation, data visualisation, text pre-processing, and topic modelling, its most innovative feature is how through its meta-documentation, it encourages users to critically reflect on their own research and data creation processes. Despite being a low-code software, *kiara*'s key aim is to move beyond button-clicking software and make digital research more transparent and open to commentary, replicability, and criticism.

We invite participants with basic to advanced experience with data management and digital tools (knowledge of Python and use of Jupyter notebooks or command line interface would be beneficial, but not essential) to take part in this three-hour workshop. Though a section of the workshop will focus on topic modelling, participants from a wider range of digital and methodological approaches are encouraged to take part. Indeed, the modes of thinking *kiara* prompts are applicable to a broad scope of research interests. More broadly, this workshop will encourage participants to consider their own experience with digital research with a specific focus on how they deal with data creation and transformation. During the session, participants will be led in a discussion on agency in digital research and how software can enable researchers to consider 'ownership' and their own impact on data and analysis.

Participants will then be introduced to several features of *kiara* and encouraged to experiment with building a topic modelling workflow. The workshop will consider how this process is constructed as a 'workflow', and encourage participants to construct their own research questions and processes in a similar way. This will help inform future iterations of the software, in ways that would work for the participants future use of it. It will also encourage participants to reflect more critically and constructively on their own research process in a digital setting.

To maximise interoperability, *kiara* is fully integrated within a Jupyter notebook environment. Participants will be therefore shown how *kiara* can be used as a Python library in Jupyter notebooks, and how more advanced users can write their own 'modules' for digital analysis. This workshop will therefore marry practical hands-on experience with the newly developed and innovative software created by the DHARPA team.

Prior to the workshop, participants will be asked to take part in a brief pre-workshop survey to determine research background, experience with DH tools and coding literacy, and encourage group work that mixes digital abilities and research interests. Participants will be asked to pre-install the software prior to the workshop and to provide the workshop coordinators with sample datasets from their research in advance, so that the results of their experimentations with *kiara* will be relevant to them. Technical support and up to date documentation including tutorials and access to the GitHub repository will be made available to the participants in advance. The language of the workshop is English. A detailed breakdown of the envisioned programme is provided below.

Workshop Schedule

- PART ONE: *Introductions and Reflections on Digital Humanities*

    • Presentation: introduction to the team and project, and outline of the workshop programme (25 mins)
    • Full group discussion: shared experiences of DH research, tools, and reflecting on the research process itself (35 mins)

BREAK (10 mins)

- PART TWO: *Topic Modelling workflow*
    • Experiments: small group 'play' with the Topic Modelling workflow on a user interface (35 mins)
    • Full group discussion: questions, feedback and thoughts after the experiments (15 mins)

BREAK (10 mins)

- PART THREE: *Workflow creation*

    • Presentation: What is a 'workflow' and how this might aid the way we construct a research process in digital history (10 mins)
    • Small group discussion: participants to consider how their own research steps might be planned as a 'workflow' (15 mins)
    • Experiments: using a template, participants to construct a workflow – these will encourage participants to structure their research process, but will also be used by the DHARPA team to create more functionality in *kiara* for participants' research in the future (25 mins)

BREAK (10 mins)

- PART FOUR: *kiara in Jupyter notebooks*

    • Presentation: working with *kiara* as a Python library in Jupyter notebooks to create more module options, with shared documentation. Participants may follow along should they desire to do so (20 mins)
    • Full group discussion: closing conversation/comments and Q&A (30 mins)

Workshop organisers

Lorella Viola is Research Associate at the Luxembourg Centre for Contemporary and Digital History (C^{2}DH), University of Luxembourg. Her research focuses on how power, latent assumptions and implicit ideologies are manifested through language and circulated in media and society. She also investigates the impact of the digital transformation of society on knowledge creation theory and practice and devises critical, data-driven methodologies for humanities and heritage research. Her latest book *The Humanities in the Digital: Beyond Critical Digital Humanities* was published by Springer - Palgrave MacMillan in 2023. She is currently co-editing the collection *Multilingual Digital Humanities* (Routledge), forthcoming in 2023. Viola is co-Principal Investigator of the DHARPA project which brings together several experts from various disciplines to develop software that goes beyond datafication and enables digital humanities researchers to reflect iteratively on the transformations and analytical operations they perform at each stage of their research.

Sean Takats is Professor of History and FNR PEARL Chair at the University of Luxembourg. A historian of early modern France and its colonies, Takats leads the Digital History Advanced Research Projects Accelerator (DHARPA) at the Luxembourg Centre for Contemporary and Digital History (C²DH). Takats is Director of Zotero, the free and open-source research platform used by millions of researchers worldwide, and he is Principal Investigator of Tropy, free and open-source software for collecting and analyzing archival documents. Together with Sharon M. Leon (Michigan State University), Takats leads Digital Scholar, a nonprofit corporation which operates the sustainability model for a range of digital history software projects.