

Artificial Intelligence in Historical Investigations: Observations

The landscape of contemporary information is undergoing revolutionary changes with the massive production of visual and text information, instantly generating big data that serves as the training ground for machine-learning tools. This shift not only impacts business operations but also significantly influences scientific research.

In this new technological era, Artificial Intelligence (AI) is driving a dynamic transformation in historical investigations, traditionally known for their time-consuming nature. AI is now introducing innovative methods for preserving, uncovering, and analysing historical data.

In the preservation of documents, AI plays a pivotal role in the digitization process through machine learning systems that enable the scanning and transcription of handwritten records. Additionally, AI provides valuable support in identifying faded visual or textual datasets, leveraging the abstraction capabilities of deep-learning models.

AI's ability to recognize visual elements, including paintings, photographs, and images in general, aids researchers in identifying artists/authors, subjects, objects, locations, dates, etc., thereby enhancing the contextualization and understanding of the topic under investigation. Speech recognition systems also contribute to the enrichment of oral history by transcribing audio records. The translation of documents is yet another opportunity provided by these tools, making historical information more accessible.

The adoption of AI facilitates the fine-tuning of historical document analysis. AI-powered analysis supports the identification of hidden nar-

ratives, enhancing the recognition of linkages between different categories of information and thereby improving understanding of the accounting and accountants' role in various contexts.

The interdisciplinarity is also favoured. Considering the importance of the exploration of accounting in its context, the AI's geospatial tools offer the opportunity to interact with geographer in the study of historical phenomena. The possibility to map past events and activities carried out by profit and non-profit organisations allows for a deeper understanding of the geographical milieu and social and economic relations in that spatial context, adding a valuable dimension to accounting history investigations.

AI's analysis of large amounts of data can lead to the discover of overlooked actors and events in accounting history. Unveiling the lesser-known accounting stories enables researchers to gain a more comprehensive understanding of the past.

However, it is essential to note that these opportunities do not imply that AI has resolved all challenges or replaced the role of the researcher. Technical and critical issues persist. From a technical standpoint, consider incunabula and early modern printed books. Produced by printers using unique casted letters, this practice necessitates the retraining of natural-language processing (NLP) models for each book. Language poses another technical challenge; while widely diffused languages like English pose no problem for NLP models, regionally specific Latin or vernacular languages present challenges for machines not specifically trained on them. These are just a couple of examples of technical problems that will require further training for the tools to solve.

Critical dimensions must also be considered, with data quality and bias being primary concerns. As highlighted earlier, the effectiveness of AI tools is contingent on the quality of the data used for training. This aspect is central to the role of AI in scientific investigations, and researchers must be mindful of potential incompleteness or bias in historical information, which could lead to invalid or biased findings.

Additionally, it is crucial to remember that historical investigations are inherently complex, demanding capabilities of context understanding and critical interpretations. While AI is data-driven and excels in pattern recognition, it can support the accounting history researcher in data investigations and pattern identifications but cannot replace the

interpretive skills of the accounting scholar. For these reasons, the equilibrium between the artificial and human dimensions, i.e., AI-driven analysis and human capabilities and expertise, is fundamental in the implementation of AI in accounting history and beyond.

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