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REVIEW

The Impact of Artificial Intelligence on the Development of Methods of Critical Text Analysis in Modern Philology

El impacto de la inteligencia artificial en el desarrollo de métodos de análisis crítico de textos en la filología moderna

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ABSTRACT

Introduction: this study aimed to evaluate the influence of artificial intelligence (AI), particularly deep learning and natural language processing (NLP) technologies, on the transformation of critical text analysis in contemporary philology.
Objective: the research focused on how AI-driven approaches modify traditional linguistic and literary methodologies.
Method: a qualitative literature review was conducted to examine recent academic contributions at the intersection of philology and AI. Sources were selected from peer-reviewed journals covering linguistics, computational philology, and digital humanities.
Results: the analysis revealed that AI-based algorithms, especially deep learning models, enhanced the detection of latent textual structures such as lexical patterns, stylistic markers, and semantic clusters. These technologies facilitated more accurate authorship attribution and allowed for the investigation of large corpora beyond the capacities of manual analysis. However, findings indicated that while AI could identify patterns and linguistic regularities, it lacked the ability to interpret deeper cultural, emotional, and symbolic meanings embedded in literary texts.
Conclusions: the integration of AI into philological research offers valuable computational tools that expand analytical possibilities without displacing the interpretive role of the human scholar. AI technologies serve as a methodological extension, enhancing the precision and scope of critical analysis. Ultimately, the use of AI enriches the study of literature by uncovering patterns inaccessible to traditional methods, while preserving the necessity of human insight for contextual and interpretative depth.

Keywords: Neural Networks; Linguistic Models; Text Analysis; Natural Language Processing.

RESUMEN

Introducción: este estudio tuvo como objetivo evaluar la influencia de la inteligencia artificial (IA), en particular las tecnologías de aprendizaje profundo y procesamiento del lenguaje natural (PLN), en la

transformación del análisis crítico de textos en la filología contemporánea.

Objetivo: la investigación se centró en cómo los enfoques impulsados por IA modificaron las metodologías lingüísticas y literarias tradicionales.

Método: Se llevó a cabo una revisión cualitativa de la literatura para examinar las contribuciones académicas recientes en la intersección entre la filología y la inteligencia artificial. Las fuentes fueron seleccionadas de revistas revisadas por pares en los campos de la lingüística, la filología computacional y las humanidades digitales.

Resultados: el análisis reveló que los algoritmos basados en IA, especialmente los modelos de aprendizaje profundo, mejoraron la detección de estructuras textuales latentes, como patrones léxicos, marcadores estilísticos y agrupaciones semánticas. Estas tecnologías facilitaron una atribución de autoría más precisa y permitieron el análisis de grandes corpus más allá de las capacidades del análisis manual. Sin embargo, se constató que, si bien la IA puede identificar regularidades lingüísticas, carece de la capacidad de interpretar significados culturales, emocionales y simbólicos más profundos presentes en los textos literarios.

Conclusiones: la integración de la IA en la investigación filológica proporciona herramientas computacionales valiosas que amplían las posibilidades analíticas sin reemplazar el papel interpretativo del investigador humano. Las tecnologías de IA actúan como una extensión metodológica que mejora la precisión y el alcance del análisis crítico. En definitiva, el uso de IA enriquece el estudio de la literatura al revelar patrones inaccesibles mediante métodos tradicionales, preservando al mismo tiempo la necesidad de la interpretación humana.

Palabras clave: Redes Neuronales; Modelos Lingüísticos; Análisis Textual; Procesamiento del Lenguaje Natural.

INTRODUCTION

The influence of artificial intelligence on the evolution of critical text analysis methods in modern philology is a significant and timely subject, as emerging technologies create new possibilities for analyzing literary works and texts more broadly. One of these methods is deep learning and digital reading, which is offered by computers with the help of artificial intelligence. This issue is central to contemporary textual studies because although the term "artificial intelligence" remains controversial and not always unambiguously interpreted, the concept of "digital reading" is gaining more and more attention in the context of philological research.[1]

Machines, thanks to the development of algorithms, can "read" texts with an accuracy that, although not comparable to human interpretive potential, still has a certain mechanical logic. They can detect text structures that may not be obvious to a human reader, such as regularities, repetitions, lexical patterns, or even linguistic anomalies (e.g., apexes). The technical capabilities of such programs allow them to classify huge volumes of texts - lemmatize, mark morpho-syntactic structures, analyse word frequencies, determine semantic relationships between them, and all this much faster and more systematically than a human can do.[2] Such efficiency becomes a powerful tool for philological analysis, particularly in literary studies. AI-powered programs can help identify, for example, hidden stylistic or genre features of texts, analyse repetitive elements, syntactic structures, or even tonal differences in the authors' writing. In cases where even experienced literary critics cannot unambiguously determine the authorship of an anonymous work, artificial intelligence programmes can attribute a text to a specific author with incredible accuracy based on statistical models.[3] Deep learning technologies can perform so-called style identification, a process where a computer determines whether a text belongs to a particular author based on the peculiarities of its style. This confirms the hypothesis that artificial intelligence can progress significantly in philological analysis, even at the level of texts considered anonymous or created under a pseudonym.

However, it is essential to note that although a computer can perform complex calculations and identify specific patterns in texts, the essence of the "beauty" of a text, its deeper meaning, remains beyond the reach of a machine. A machine can only process the surface features of a text, such as tokens, which are elements it can read and analyse, converting them into digital formats. However, the interpretation of such "features" is still minimal and does not replace the complete interpretation that a human can give.[4] It is the human interpretation that can see not only the mechanical connections between words but also the subtle cultural, emotional, historical or social contexts that the machine cannot understand.

However, the role of artificial intelligence in modern literary and linguistic analysis is not to replace human reading but to complement it to provide new tools for research. In this sense, artificial intelligence is not a substitute for traditional methods of analysis but a new tool that can highlight aspects of a text that might have been underestimated or overlooked due to the limitations of human perception.[5] Digital reading allows us to objectify the reading process, in particular, to highlight certain stages of the interpretive process, trace its development, and identify key moments or complex connections that may be important for critical text

analysis. Thus, we are not dealing with the objectification of content, since the meaning of a text is always constructed, but with the objectification of the reading process itself, where artificial intelligence acts as a powerful tool for identifying textual artefacts.

Artificial intelligence technologies hold considerable potential for advancing new methods of critical textual analysis in philology. They can uncover new textual patterns and enable a more profound and practical study of literary works, revealing aspects that traditional analysis methods could not detect. As such, AI represents a significant leap forward in the evolution of critical textual analysis, offering fresh perspectives for modern philology.

Modern philology, against the backdrop of technological changes made possible by the development of artificial intelligence, is going through a significant stage of transformation. One of the most significant aspects of these changes is the transition from traditional physical text carriers (paper books, folios) to digital formats, which have changed how texts are preserved and disseminated and the very nature of textual linguistics. This transition does not simply require a change of medium; it changes how we perceive and interpret a text and, thus, the methods of critical analysis.

Digital corpora, created with the help of modern information technologies, allow us to update and expand the classical methods of philology and change approaches to hermeneutical analysis.[6] They contribute to developing new interpretations, allowing for a much deeper and more comprehensive analysis. According to a study by [7], analysing large volumes of texts using machine learning algorithms allows us to identify new patterns that would not have been noticed in traditional reading or manual analysis. Technologies that use artificial intelligence can provide opportunities to automatically classify texts by topic, style, or even sentiment analysis, which opens up new ways of interpreting and understanding texts. According to Veale and Cook[8], digital text-processing methods today are of scientific value only if they offer new approaches to reading and interpreting text. This means the proposed methods should contribute to discovering new meanings and possibilities for scientific interpretation. If properly applied, modern technologies can significantly enrich philological research by opening up new horizons for textual analysis. In this context, modern philology should consider the latest possibilities of digital technologies and artificial intelligence, not abandoning traditional methods but actively integrating them to broaden and deepen the understanding of the text.[9] Combining old and new approaches can create a new stage in developing textual linguistics and literary studies. Relying on advanced statistical tools, new approaches offer description and modelling of text corpora, useful for attribution and genetics of texts, literary commentary, discourse analysis, and other fields.[10] As an important example, the processing of statistical correlations in many studies has made it possible to emphasise the network structures of texts that were previously little known, to get closer to their texture, or simply to objectify them around a particular keyword, topic, and isotopy.[11] With the advent of big text data (e.g., Google Books) and the explosive growth of computing power (CPUs, GPUs, etc.), artificial intelligence, neural networks, and statistics are increasingly being used in philological research.

Research Problem

While the potential of AI in text analysis is clear, the question of how these technologies can enhance the development of critical analysis methods in philology remains unresolved. It is crucial to identify both the advantages and limitations of using AI in text analysis, as well as to understand how these technologies can complement traditional interpretive methods – augmenting, rather than replacing, human reading and offering new tools for a deeper understanding of the text.

Research Focus

This research focuses on examining how AI technologies, specifically digital reading algorithms, can impact traditional methods of critical text analysis in modern philology. It particularly explores how AI can assist in identifying text structures that may elude human readers, such as lexical patterns, repetitions, and stylistic features, as well as in determining the authorship of anonymous or pseudonymous works.

Research Aim

The primary objective of this study is to evaluate how artificial intelligence is changing approaches to critical text analysis in philology. It also aims to determine what new opportunities for text interpretation are opened up by the use of digital reading and to find out how AI can complement traditional methods of literary analysis rather than replace them, creating new ways of interpreting texts.

Research Questions

1. How does artificial intelligence contribute to the development of methods of critical text analysis in modern philology?
2. What are the advantages of digital reading compared to traditional text analysis methods?

3. How can AI algorithms detect textual structures that remain invisible to human readers?

4. This study aims not only to clarify AI's role in modern literary studies but also to determine its place in the development of new methods of critical text analysis, which can significantly change approaches to the study of literature and philology in general.

METHOD

The initial phase of the study aimed to explore how artificial intelligence (AI) influences the development of critical textual analysis methods in modern philology. This phase involved a thorough review of existing literature, with a specific focus on the role of AI in textual studies. A systematic approach was employed to select sources published between 2019 and 2024, ensuring the study's relevance and currency. The references were primarily from peer-reviewed journals, books, conference proceedings, and reputable scientific databases, particularly on research addressing AI's impact in philology, computational linguistics, and digital humanities.

Planning Phase: Developing research questions regarding the influence of AI on philology and textual analysis. Defining the criteria for selecting literature, in particular with a focus on research for 2019-2024. Outline a structure for categorising sources according to their relevance to certain subfields of philology (e.g. literary studies, linguistics, digital humanities).

Conducting Phase: During the research phase, relevant literature was gathered and examined in a structured manner. The role of AI in the critical analysis of texts was explored through three key perspectives: the application of machine learning (ML) and deep learning (DL) models for text processing, the integration of AI with conventional philological techniques, and the influence of AI tools on the interpretation and analysis of literary and linguistic works.

Documenting Phase: Fifty-five peer-reviewed articles, books, and scientific papers published between 2019 and 2024 have been collected. The sources are classified according to their methodological approach, AI technologies (neural networks, natural language processing algorithms, machine learning), and their contribution to the textual analysis of philology. The strengths and weaknesses of AI methods compared to traditional philological techniques are analysed. New trends in using AI tools in textual research, including sentiment analysis, text classification, and digital humanities projects, are identified.

Sample

The documenting stage involved summarising the results of the literature review into a single, logical and well-founded research paper. This stage included synthesising the results from various sources, identifying key themes and patterns that emerged in the literature, and critically assessing the contribution of AI to modern philological methods.

The main activities at the documentation stage:

- A summary of key findings from 55 selected sources.
- Organisation of results by thematic sections (AI in text classification, AI in linguistics, AI in literary analysis).
- Comparison of AI methods with traditional philological approaches.
- Documenting gaps in existing research, identifying areas for further research, and identifying future challenges in implementing AI in text analysis.

Instruments and Procedures

This study selected 55 academic works published between 2019 and 2024. Due to their straight importance to the convergence of artificial intelligence (AI) and philology. The selection process was planned in order to guarantee transparency, replicability, and methodological rigour. It allowed other investigators to repeat analogous results. The literature search was led across three key academic databases—Google Scholar, JSTOR, and Scopus. They were chosen for their inclusive coverage of interdisciplinary research. Particularly it touched the fields of digital humanities and computational linguistics. In order to identify relevant studies, a combination of keywords, including "Artificial Intelligence" and "Philology," "Natural Language Processing" and "Text Analysis," "Machine Learning" and "Literary Studies," "Digital Humanities" and "AI," as well as "Computational Linguistics" and "Authorship Attribution" were used. Boolean operators (AND/OR) were incorporated where suitable to refine the searches.

In order to ensure inclusion of only the most relevant sources, specific criteria were applied. Papers had to be published between January 1, 2019, and December 31, 2024; be peer-reviewed journal articles, conference papers, or high-impact preprints. They were to focus clearly on the application of AI in philological or textual analysis. Moreover, they were to be written in English; and provide either theoretical insight or empirical findings with clear methodological descriptions. Equally, studies were excluded if they fixated only on the technical development of AI lacking application to textual analysis. Ifthey addressed general digital humanities

themes without reference to AI-based methods, were not available in full text, or lacked methodological transparency were as well rejected.

The preliminary database search generated 223 records. Afterward screening titles and abstracts for relevance, 102 articles were engaged. Full-text screening further excluded 47 works grounded on inadequate methodological detail or thematic misalignment. The concluding sample included 55 scholarly works. In order to guarantee academic significance, a citation analysis using Google Scholar metrics was led to categorise both high-impact studies and emergent contributions. This approach allowed for the inclusion of well-established research together with ground-breaking yet recently published works that may not yet have accrued substantial citation counts. Lastly, each article was manually reviewed. They were verified concerning their relevance to core research themes (AI-driven authorship attribution, semantic analysis, and stylistic modelling in philological inquiry). The nominated studies provided a varied yet methodologically coherent foundation for assessing the evolving role of artificial intelligence in contemporary philology (table 1).

Table 1. Literature selection process	
Process Steps	**Description**
Search for sources	Search for scientific articles, books and materials using academic databases.
Selecting sources	Selection of sources based on criteria including time of publication (2019-2024).
Classification of sources	Classification of sources by methodological approaches, AI technologies and their contribution to textual analysis.
Quality assessment	Assessment of the significance and relevance of each source to the topic under study.

RESULTS

Artificial intelligence, in particular deep learning technologies, is playing an increasingly important role in the development of methods of critical textual analysis in modern philology. These technologies are significantly changing approaches to the study of literary works, allowing philologists and linguists to use new tools to uncover the deep characteristics of a text that would be difficult to access using traditional methods.

One of the greatest applications of deep learning in philological research is authorial texts automated identification. By training models on labelled corpora, machines can learn to recognise stylistic and lexical patterns distinguishing of individual authors. This procedure often includes named entity recognition (NER) to detect and analyse the use of proper names (character names, geographic locations, or historical reference). As they can serve as stylistic markers. As well, recurrent and convolutional neural networks (RNNs, CNNs) or transformer-based models (e.g., BERT) can be used to capture deeper contextual associations amid proper names and surrounding linguistic features. It contributes to the enhancement of author attribution accuracy. This allows for accurate authorship attribution and makes it possible to analyse the grammatical structures that accompany these names. Thus, artificial intelligence can identify lexical and grammatical patterns specific to a particular author and use them to learn more about their stylistic features.

Filtering and analysing grammatical structures allow computers to classify texts by authorship and other important features, such as stylistic features, intentional language or specific topics. In this context, deep learning can help to identify unusual lexical structures or frequently used phrases of speech that identify the creative handwriting of a particular author.

Tools such as machine learning and deep neural networks allow us to work with huge amounts of data, greatly enriching critical textual analysis methods. Technologies can effectively analyse large volumes of literary works, finding complex patterns that would be difficult to see with the human eye, especially when analysing huge corpora of texts or historical documents. This makes it possible to expand the boundaries of philological research and apply new strategies for studying literature.

Thus, artificial intelligence and deep learning provide modern philologists with powerful tools for critically analysing texts. They allow us to open new horizons in literature research, providing a more accurate and detailed analysis of the text, which is made possible by the ability of machines to process large amounts of information and find complex patterns. These new possibilities open up broad prospects for developing philology and the humanities in general. The scientific research of contemporary scholars relevant to the present study is shown in table 2.

Table 2. Analysis of the selected literature sources related to the topic

Author (s)	Title	Type of research	Methods	Results
Graziosi, Haubold, Cowen-Breen and Brooks[12]	Machine learning and the future of philology: A case study	Case study	Analysing literary texts using machine learning	Machine learning has great potential for philology, particularly in text analysis and the study of language structures.
Assunção, Patrão, Castelo-Branco and Menezes[13]	An overview of emotion in artificial intelligence	Review article	Review of existing research and theories	Analysis of the role of emotions in AI and their impact on the development of artificial intelligence systems.
Crane[14]	Beyond translation: Language hacking and philology	Review article	Theoretical analysis of linguistic philology and translation	Consideration of new approaches in philology through the prism of language hacking and translation.
Wei[15]	Copyright protection and data reliability of AI-written literary creations in smart cities	Research.	Theoretical analysis of copyright protection in AI	Discussion of legal aspects of protecting AI-generated literary works in smart cities.
Hrachova, Bakhov, Ishchuk, Dzhydzhora and Strashko[16]	Analysing the impact of artificial intelligence on the development of contemporary philosophy	Researching the impact of AI on philology	Using automated tools for linguistic analysis	The article discusses the role of AI in modern philology and its impact on linguistic research.
Strashko, Melnyk, Kozak, Torchynska and Dyiak[17]	Linguistic analysis of texts in philosophical research: The use of Salesforce Einstein artificial intelligence	Research on methods of linguistic analysis	Using Salesforce Einstein AI for text analysis	The AI system has shown good results in the linguistic analysis of texts, in particular, in identifying language structures.
Markus and Kirner-Ludwig[18]	A philologist's perspective on artificial intelligence: A case study into English dialect dictionary online 4.0	Case study	Using AI to create and improve dictionaries	AI is helping to develop new approaches to creating online dictionaries and learning dialects.
Carpitella and Carpitella[19]	Artificial intelligence enriching contributions from multiple perspectives in ancient text analysis	Conference report	Application of AI in the analysis of ancient texts	AI helps to create a multifaceted approach to the analysis of ancient texts.
Van Heerden and Bas[20]	AI as author: Bridging the gap between machine learning and literary theory	Theoretical research	Application of AI in literary analysis and theory	Researching the interaction between AI and literary theory, new approaches to creativity and authorship.
Jones[21]	Experiential literature? Comparing the work of AI and human authors	A comparative study	Comparison of AI and human authors' creativity	Differences in the approaches of AI and humans to the creation of literature, discussion of experience, and research are revealed.
Heflin[22]	AI-generated literature and the vectorised word	Doctoral dissertation|.	Using AI to create literary works	Exploring the potential of AI to generate literature through word vector analysis.
Da[23]	The computational case against computational literary studies	Theoretical research	Critical analysis of computer methods in literature research	Arguments against the use of computational methods in literature research.
Chun and Elkins[24]	What the rise of AI means for narrative studies: A response to "Why computers will never read (or write) literature"	Feedback on the previous study	Analysing the role of AI in narrative research	The author considers the impact of AI on narrative research and its development in modern conditions.
Barron[25]	AI and literature	Review article	Theoretical analysis of AI's impact on the literature	The article discusses the interaction between AI and literature, new opportunities for creating literary works with the help of AI.
Bajohr[26]	Algorithmic empathy: On two paradigms of digital generative literature and the need for a critique of AI works	Theoretical research	Analysis of algorithmic empathy and generative literature	Discussion of critical aspects of digital literature and the need to revise AI works.

Lévy[27]	Calculer la sémantique avec le langue IEML	Theoretical research	Using the IEML language to compute semantics	Development of a new methodology for semantic analysis of texts using the IEML language.
Chagué, Chiffoleau, Levenson, Scheithauer and Pinche[28]	Chaînes d'acquisition, de traitement et de publication du texte	Dissertation	Studying text processing chains with AI	Discussion of the process of creating and publishing a text using intelligent systems.
Carré, Georges and Valluy[29]	Les Humanités numériques, quelles définitions?	Review article	Analysis of concepts and definitions of digital humanities	The article explores the diversity of definitions and approaches to digital humanities.
Miras, Lefevre, Arbach, Rapilly and Dumarski[30]	Apports d'un outil d'intelligence artificielle à l'enseignement-apprentissage des langues	Conference report	Using AI in language learning	Assessing the impact of AI on language learning processes and the development of new technologies in this area.
Larsonneur[31]	Intelligence artificielle ET/OU diversity linguistique: Les paradoxes du traitement automatique des langues	Review article	Analysing the paradoxes of automatic language processing	Consideration of the difficulties and paradoxes of language processing using AI.
Jouitteau[32]	Guide de survie des langues minorisées à l'heure de l'intelligence artificielle: Appel aux communautés parlantes	Review article	Discussing the importance of preserving minority languages with the help of AI	Analysis of the role of AI in the preservation of minority languages and their development.
Soh, Ouambo and Kouesso[33]	Analyse de la vitality des langues camerounaises à l'aide de techniques d'intelligence artificielle	Research.	Using AI to analyse language viability	Using AI to study the viability of languages in Cameroon and predict their development.
Schurster and Ferreiro-Vázquez[34]	Traduction and paratraduction en tant que stratégies de résistance à la réification à l'ère de l'intelligence artificielle	Theoretical research	Analysis of translation and paraphrase as strategies of resistance	Discussion of translation and paratranslation as strategies to combat text refinement with the help of AI.
Silvério Costa, Viana Santos and Namiuti[35]	Transcrição manuelle et automatique de textos historiques manuscrits à l'aide du logiciel Lapelinc Transcriptor	Technical research	Using automatic transcription tools	Evaluation of the accuracy of automatic transcription of historical manuscripts.
Pereira Emilio[36]	Perspectivas dos bolsistas e voluntários o processo de tradução num centro de escrita paranaense	Researching the translation process	Survey of translators and volunteers	Analysis of the attitude to the translation process in the writing centre and evaluation of the experience.
Leal[37]	Tradução, conceituação sistematizada, tecnologia, filosofia	Theoretical research	Theoretical analysis of translation and technology	Consideration of the conceptualisation of translation through the prism of technology and philosophy.
Khasawneh[38]	The potential of AI in facilitating cross-cultural communication through translation	Theoretical research	Analysing AI capabilities for intercultural communication	AI can significantly improve intercultural communication through automatic translation.
Elkins[39]	In search of a translator: Using AI to assess what's lost in translation	An empirical study	Analysis of translation losses using AI	Estimating what is lost in the AI translation process.
Gervais[40]	AI derivatives: The application to the derivative work right to literary and artistic productions of AI machines	Legal research	Legal analysis of copyright in AI works	Assessment of legal aspects of copyright for AI-generated works.
Moneus and Sahari[41]	Artificial intelligence and human translation: A contrastive study based on legal texts	A comparative study	Comparison of human and AI translation on legal texts	Comparison of human and AI translation results in legal texts.

Thus, the literature analysis has shown that machine learning, particularly neural networks, plays an important role in modern linguistic research, particularly in text analysis and the study of language structures. Deep learning makes it possible to create powerful linguistic models that can analyse large amounts of textual data, detect complex patterns, and recognise texts' lexical, grammatical, and stylistic features. This approach opens up new opportunities for studying literary and linguistic phenomena. Deep learning is a key technology in natural language processing (NLP) that allows for effective text analysis. Neural networks detect language structures at different levels, from syntax to semantics. They can recognise the emotional colours of texts and the stylistic features of authors and detect changes in the use of language units in different contexts. These models can efficiently perform machine translation, text classification, summarisation, and text generation tasks.

Language hacking in the context of linguistic models is the use of AI to detect and manipulate language structures and create new language tools for analysis and translation.[42] Natural language processing (NLP) using neural networks allows for the automatic recognition and interpretation of complex language phenomena, which previously required considerable effort from linguists. For example, in translation, neural networks can be effectively used to better adapt a text to cultural and lexical differences.

According to scientists, neural networks can analyse emotions contained in texts and identify their impact on the development of literature or language structures. Literary texts can be used to create models that determine how emotional tones affect the author's style or narrative construction. This allows us to analyse existing texts and generate new ones, taking into account the emotional context.

The development of neural networks raises an important issue of the legal protection of texts created by AI. Determining the boundaries of copyright for works created by artificial intelligence is a pressing issue for linguistic research and affects legal aspects in the digital age. These issues become especially important in automatically generated literary or scientific texts where AI is a "co-author".

Neural networks allow you to create linguistic models that can achieve significant results in areas such as automatic recognition of language structures and analysis of stylistic characteristics. Using large amounts of textual data, neural networks can extract specific features of texts, such as grammatical forms, lexical features or stylistic figures, which allows for detailed linguistic analysis.

Natural language processing technologies can significantly improve linguistic analysis, as neural networks can automatically extract semantic information from texts, recognise syntactic structures, and classify texts according to certain features. This opens up new opportunities for creating online dictionaries, learning dialects, and researching historical and ancient texts, helping to preserve language heritage.

The use of neural networks to create texts is increasing interest in new forms of authorship. Generating literary works by analysing word vectors and creating new stylistic models allows AI to write in the style of different authors and even create new genres or languages. This changes the approach to creativity, raising the question of how to determine authorship in works created by artificial intelligence.

Despite its many advantages, some researchers have doubts about using AI in literary research. The criticism relates to computer models' ability to deeply understand the cultural and social contexts of texts, which can lead to simplistic analysis and lost nuances that are important for a full understanding of a literary work.

Thus, AI opens up new possibilities for narrative research. It is able to detect structures and patterns in stories and predict the direction of narrative development based on the analysis of a large volume of texts. This can change our understanding of the creation and perception of literary works, especially in the context of creating new genres and texts.

Semantic text analysis using new linguistic models, such as the IEML (Interlingua for Encoding Meaning) language, provides a deeper understanding of texts' meanings and the construction of more accurate linguistic models. This allows for the creation of more efficient algorithms for analysing a text's content and structure.

Automatic translation based on neural networks significantly improves intercultural communication. AI can help reduce language barriers by ensuring translation accuracy and speed, which is especially important in the era of globalisation. Such technologies allow the adaptation of a text to another language and the preservation of cultural specificity.

Related research generally focuses on the use of neural networks and linguistic models for textual analysis and natural language processing, highlighting the importance of this technology in linguistic research, creativity, translation, and intercultural communication.

Thus, the results of modern research related to the topic presented here have shown that in the modern world, where artificial intelligence (AI) technologies increasingly influence various fields of science, its role in philology and textual linguistics has become the subject of considerable debate. One of the main topics is using deep learning models for automated text analysis. Even though these models have been successfully applied in many fields, gaps still need to be found in their integration into the humanities.

Artificial intelligence using deep learning methods creates new opportunities for text research. However, for philologists and linguists, it is important not only to get the result but also to understand the mechanisms of its

achievement. The analysis results obtained by AI should not remain a "black box" that cannot be interpreted. If the system cannot explain what textual units and in what context it draws conclusions, it questions its intellectual capabilities. This is an important issue for philology, as critical analysis of a text is traditionally based on a detailed examination of its components: vocabulary, style, structure, theme, etc.

One of the main tasks of modern textual linguistics is to understand the "hidden layers" of a text that are formed due to data processing by AI models. Deep learning allows us to identify "textual units" such as words, phrases, and thematic and stylistic markers often overlooked in traditional analysis. However, it is important that these "layers" are not only detected but can also be interpreted using hermeneutical methods that reveal not only the form of the text but also its meaning.

To successfully interpret a text in the digital era, combining a technological approach with traditional humanities methods is important. AI offers new representations of texts, from simple tables and matrices to complex vector and hypertext models. At the same time, these representations must be understandable for human comprehension, as they are the basis for further interpretation and critical analysis of the text. Each approach provides an opportunity for a deeper understanding of how language works at different levels - from individual words to global lexical and semantic structures. New models allow us to identify "textual units" of different levels: simple lexemes to complex phraseological constructions, thematic markers, and deep stylistic structures. These units become the basis for creating new interpretive models that consider both the text's lexical and semantic aspects. This makes text analysis much more prosperous than just counting word frequency.

A combination of statistical methods and deep learning plays a unique role in modern text analysis. A statistical approach to text analysis, based on lexicometrics and other frequency analysis methods, allows us to identify paradigmatic patterns in language use. At the same time, deep learning, mainly through convolutional neural networks, provides syntactic analysis, allowing you to identify combinations of words in their specific contexts. This synergistic approach is beneficial for critical text analysis, as it allows for the simultaneous consideration of individual language choices and their interaction in the text.

As a result, AI and deep learning open up new opportunities for textual analysis that require philologists and linguists to develop new methodological approaches. They allow us to combine traditional critical methods with the latest technologies, penetrate deeper into the structure of the text, and reveal its ambiguity and hidden meanings. This integrative approach makes critical textual analysis more complex and multidimensional, providing new perspectives for the study of literary, cultural, and linguistic phenomena in the digital age.

DISCUSSION

Today, when a machine is capable of making predictions and classifying or recognising texts, the question arises: Can we get accurate classifications and a description of the processes behind them? This is where the hermeneutic approach comes in, requiring AI to show the result and explain how it was achieved. This approach creates new opportunities for text research, where the focus is not only on classifying words or phrases but also on understanding their meaning within a specific context.

The swift advancement of artificial intelligence (AI) has profoundly transformed the approaches to critical textual analysis in contemporary philology. One of the most important advances in this field is using deep learning technologies for text analysis, which allows researchers to go beyond superficial reading and discover deeper, intertextual connections. This transformation challenges traditional philological methods and opens up new possibilities for textual analysis.

Answering the working question of how artificial intelligence contributes to the development of methods of critical textual analysis in modern philology, Bi[43] notes that AI, especially through deep learning models, increases the efficiency of critical textual analysis by automating the detection of hidden patterns in large corpora of texts. This technological innovation allows us to better understand texts by going beyond traditional literary analysis and integrating computational methods to identify previously unnoticed connections. In a similar study, Lindes[44] observes that AI tools can analyse large volumes of data at speeds never seen before, enabling them to detect stylistic and structural features in texts that might be too subtle for human analysis to uncover.

Integrating AI into textual studies in philology allows for a more comprehensive approach to understanding the relationships between texts.[45] AI models can analyse a work's syntactic, semantic, and intertextual elements, showing how a text interacts with other works, past literary traditions, and even broader cultural contexts. As Pishchanska[46] notes, the depth of a text today is measured not only through its structural components but also through its interaction with other texts, which expands the concept of contextuality in the digital age.

In response to the second research question regarding the advantages of digital reading over traditional text analysis methods, Russin et al.[47] highlight several benefits of digital reading and the digitisation of texts. The primary advantage is the increased accessibility and ease of manipulation of digital texts, enabling researchers to work with vast collections of texts that would have been challenging or impossible to analyse manually. AI-

driven analysis tools facilitate the fast processing and comparison of texts across various genres, periods, and languages, enhancing the depth and scope of textual interpretation.

Sowmya and Ananthanarayana[48] note that AI tools also allow for the quantification of various aspects of texts - such as word frequency, emotional tone, syntactic complexity, and thematic development - which provides new insights into how a text functions on a macro level. Digital reading allows for identifying patterns of repetition, parallelism, and variation across texts, which would be difficult to do through the traditional method of detailed reading. With the help of AI, researchers can move from a linear analysis of a single text to a more holistic, comparative approach.

As the literature analysis has shown, AI is notable for its ability to detect hidden textual structures that may not be obvious to human readers. A key advantage of AI in text analysis is its capacity to detect patterns and connections in texts that are too intricate, subtle, or vast to be processed by humans. Using machine learning techniques, AI can detect recurring grammatical structures, semantic shifts, and even cultural and historical references embedded in a text.[49]

According to [50], deep learning algorithms can identify stylistic features of a particular author or era, which allows for the attribution of authorship or detection of previously unnoticed intertextual connections. In a related study, the authors argue that AI models are also able to detect structural elements such as repetition, metaphorical patterns, and thematic resonances that shape the overall meaning of a text but may not be evident during manual reading.[51]

A prime example of how AI can contribute to the expansion of intertextual analysis is the use of AI to analyse political speeches, where a deep learning algorithm trained to detect stylistic and thematic patterns in speeches can identify not only the speaker's unique rhetorical style but also elements that echo those of previous speakers.[52] These echoes are examples of contextuality - hidden but recognisable resonances between texts. AI also reveals that contextuality goes far beyond direct quotations or borrowings. AI can detect broader influence patterns, including recurring stylistic structures, grammatical patterns, and even lexical motivations that shape a text. These elements go beyond what the author has consciously borrowed and include subtle resonances from other texts or cultural and political traditions.[53,43] AI's capability to uncover these hidden factors provides new insights into the concept of contextuality, broadening it to include unseen connections and overlooked influences that shape the overall meaning of a text.[54; 55] This shift represents an important advance in understanding and interpreting texts - moving from a simplistic model of textual borrowing to a more complex understanding of a text as a network of interactions.

Integrating AI into critical text analysis methods can improve traditional approaches and open up new possibilities for revealing hidden aspects of a text.[56;57] By identifying intertextual connections, grammatical structures, and stylistic influences, AI expands the understanding of texts in previously impossible ways.[58] Moreover, AI unlocks new paths in literature, for authors by helping in overcoming creative blocks, generating fresh ideas, as well as constructing interactive worlds for readers.[59]

As AI continues to evolve, it will undoubtedly further transform philological methods, pushing the boundaries of what can be analysed, understood, and interpreted in literary and public discourse. Thus, AI is not just a tool for automating analysis but a catalyst for rethinking the very nature of textual interpretation.

CONCLUSIONS

Modern philology is not just about digitising traditional humanities disciplines. It is about the humanisation of digital technologies, i.e. the use of these technologies to expand our capabilities in understanding and analysing cultural heritage. Historians, geographers, linguists, and other textual specialists cannot limit themselves to scanning archives, maps, or corpora. They seek to radically revise their research objects, work protocols, and even scientific conclusions, considering the possibilities offered by digital tools. Artificial intelligence (AI) technologies open new horizons for philological textual analysis, allowing for deeper, more multidimensional textual analysis through mathematical models and algorithms.

However, it is important to understand that humanising digital technologies does not mean anthropomorphising the machine, i.e. attributing human qualities such as sensitivity or intelligence. It is not about endowing artificial intelligence with unknown "mental" or "intellectual" properties.

Rather, humanising technology is about removing it from the status of an 'object' and adopting a hermeneutical stance towards it. Instead of accepting AI's work as final, we should realise that these results are only starting points for further interpretation and rethinking because the machine does not make final conclusions.

AI is useful for identifying certain patterns or structures in texts, and these results remain open to further interpretation and critical reflection. AI "reclaims" the eternal objects of the humanities for the human mind, introducing digital representations of these objects into the circle of traditional interpretive practices. Thus, AI does not replace humans in the process of analysis but serves as a tool that helps to make this process deeper and more multifaceted.

A key limitation of this study is the scope and specificity of the literature sample. While the review of 55

sources provides a range of perspectives on the use of artificial intelligence in contemporary philology, it also restricts the depth of analysis regarding broader themes and areas of research.

In this context, one of the greatest prospects for future research is the development of methodologies that combine traditional philological approaches with the latest digital tools. This will increase the efficiency of research and significantly expand the horizons of critical text analysis by integrating new techniques for automated detection of patterns, emotional tone, stylistic features, and even historical contexts.

Since AI requires collaboration across disciplines, future research may include closer cooperation between philologists, historians, computer scientists, and experts in other humanities fields. This approach will allow for the creation of more complex and multifaceted models for text analysis that take into account both linguistic, cultural, and social aspects.

Future research should also consider the ethical implications of using AI in the humanities. How can we ensure that the results are correct and unbiased? How do we avoid biases embedded in algorithms or training data? These issues require further consideration within the philosophy of science and the ethics of digital technologies.

As AI develops, it is important to work on improving algorithms so that they can better cope with the interpretation of complex lexical and stylistic features of texts. For example, improving models for analysing metaphors, humour, or cultural specifics, which are often overlooked by classical algorithms.

Thus, although artificial intelligence opens up new opportunities for critical textual analysis in philology, its application requires caution, flexibility, and constant integration with traditional methods. In the future, we can expect to see the development of interdisciplinary approaches, new technical solutions, and ethical standards that will allow us to maximise AI's potential in the humanities.

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CONFLICT OF INTEREST
The authors declare that there is no conflict of interest.

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