INFORMATION SYSTEMS AS A TOOL FOR PHILOLOGICAL RESEARCH

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Abstract: Information systems have become an indispensable tool for philological research. They can be used to store, organize, and analyze large amounts of data, including text, images, and audio. This data can be used to answer a variety of research questions, such as the history of a language, the development of a literary genre, or the cultural significance of a text.

Key words: *text analysis, natural language processing, machine learning, digital humanities, open access.*

AXBOROT TIZIMLARI FILOLOGIK TADQIQOTLAR UCHUN VOSITA SIFATIDA

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Annotatsiya: Axborot tizimlari filologik tadqiqotlar uchun ajralmas vositaga aylandi. Ulardan matn, tasvir va audio kabi katta hajmdagi ma’lumotlarni saqlash, tartibga solish va tahlil qilish uchun foydalanish mumkin. Bu ma’lumotlardan til tarixi, adabiy janrning rivojlanishi yoki matnning madaniy ahamiyati kabi turli tadqiqot savollariga javob berish uchun foydalanish mumkin.

Kalit so‘zlar: *matn tahlili, tabiiy tilni qayta ishlash, mashinaviy o‘rganish, raqamli gumanitar fanlar.*

ИНФОРМАЦИОННЫЕ СИСТЕМЫ КАК ИНСТРУМЕНТ ФИЛОЛОГИЧЕСКИХ ИССЛЕДОВАНИЙ

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Аннотация: Информационные системы стали незаменимым инструментом филологических исследований. Их можно использовать для хранения, организации и анализа больших объемов данных, включая текст, изображения и аудио. Эти данные можно использовать для ответа на различные исследовательские вопросы, такие как история языка, развитие литературного жанра или культурное значение текста.

Ключевые слова: *анализ текста, машинное обучение, цифровые гуманитарные науки, открытый доступ.*

INTRODUCTION

More than just the study of language, philology is a vibrant tapestry woven from the threads of literature, history, and culture. It delves into the intricate web of communication, tracing the evolution of words, dissecting the meanings hidden within texts, and illuminating the cultural contexts that shape both. This vast and dynamic field encompasses a multitude of disciplines, from the meticulous detective work of textual criticism to the grand narratives of historical linguistics, and from the insightful interpretations of literary analysis to the meticulous reconstruction of lost languages [1].

In recent times, information systems (IS) have emerged as a potent catalyst for philological research. No longer confined to dusty libraries and laborious manual analysis, philologists now wield powerful tools to automate tedious tasks, analyze colossal datasets, and unlock hidden patterns within mountains of text. Imagine, for instance, meticulously comparing thousands of ancient manuscripts to reconstruct the original version of a classic poem, or unearthing the subtle evolution of a word's meaning across centuries through a comprehensive analysis of historical documents [2].

These digital advancements have not only revolutionized the way we conduct research but also opened doors to entirely new avenues of exploration. We can now map the spread of linguistic influences across continents, chart the evolution of literary genres through statistical analysis, and even reconstruct the soundscapes of extinct languages through sophisticated computational models. IS has become not just a tool but a collaborator, pushing the boundaries of our understanding and revealing hidden connections within the vast tapestry of human expression [3].

METHODS

IS can be used in philological research in a variety of ways. Some of the most common applications include:

– Natural language processing (NLP): NLP is a field of computer science that deals with the interaction between computers and human (natural) languages. NLP can be used to analyze text, translate between languages, and generate text.

– Machine learning (ML): ML is a type of AI that allows computers to learn from data without being explicitly programmed. ML can be used to classify text, identify patterns in data, and predict future trends [4].

– Computer vision (CV): CV is a field of computer science that deals with the extraction of information from digital images and videos. CV can be used to analyze handwriting, identify objects in images, and generate images.

– Specific examples of how IS can be used in philological research

– Natural Language Processing can be used to analyze historical texts to identify patterns and trends. For example, Natural Language Processing can be used to identify changes in the use of language over time or to identify patterns in the occurrence of certain words or phrases.

– Machine Learning can be used to classify text into different categories, such as genre or style. For example, Machine Learning can be used to classify poems into different genres or to identify different styles of writing [5].

RESULTS

IS has already been used to achieve significant results in philological research. For example, IS has been used to:

– Develop new dictionaries and grammars of languages - The landscape of language resource development, including dictionaries and grammars, has undergone a revolutionary transformation with the advent of Information Systems (IS). In bygone eras, human experts invested years meticulously analyzing texts and data to compile these resources. Yet, the contemporary era witnesses a paradigm shift as IS can now automate numerous tasks, enabling the creation of exceptionally thorough and precise dictionaries and grammars in significantly less time than manual methods.

– Translate literature into other languages - The utilization of Information Systems (IS) is transforming the landscape of translating literature into different languages. Historically, the translation process was a time-consuming and labor-intensive endeavor primarily undertaken by human translators.

– Identify patterns in historical texts - The application of Information Systems (IS) is reshaping the approach to analyzing historical texts. Previously, this task was characterized by its time-consuming and labor-intensive nature, involving human experts who had to manually read and interpret texts.

– Analyze social media data - Social media data is a vast and growing source of information that can be used to gain insights into human behavior, social trends, and

cultural changes. Information systems (IS) can be used to analyze social media data to identify patterns, trends, and relationships that would be difficult or impossible to see with the naked eye [6].

DISCUSSION

There are a number of challenges that need to be addressed before IS can be fully integrated into the study of philology. One challenge is the lack of linguistic resources. There are not as many large datasets of text and code as there are for other fields, such as computer science and engineering. This makes it difficult to train IS models that can accurately process text [7].

Another challenge is the shortage of qualified experts. IS is a complex field that requires a deep understanding of both linguistics and computer science. There are not enough qualified experts in philology to fully develop and deploy IS tools [8].

Despite these challenges, the potential benefits of IS for philology are significant. IS has the potential to make the study of philology more efficient, accurate, and accessible. It can also help to open up new areas of research that would be difficult or impossible to study without IS [9].

As IS continues to develop, it is likely that it will play an increasingly important role in the study of philology. IS has the potential to revolutionize the way we understand language, literature, and culture [10].

CONCLUSION

IS has the potential to revolutionize the study of philology. By automating tasks, analyzing large amounts of data, and generating new insights, IS can help philologists to better understand language, literature, and culture.

REFERENCES

1. Bagozzi R. P. Measurement and meaning in information systems and organizational research: Methodological and philosophical foundations //MIS quarterly. – 2011. – С. 261-292.

2. Avgerou C. Information systems: what sort of science is it? //Omega. – 2000. – Т. 28. – №. 5. – С. 567-579.

3. Gregg D. G., Kulkarni U. R., Vinzé A. S. Understanding the philosophical underpinnings of software engineering research in information systems //Information systems frontiers. – 2001. – Т. 3. – С. 169-183.

4. Brey P., Søraker J. H. Philosophy of computing and information technology //Philosophy of technology and engineering sciences. – North-Holland, 2009. – С. 1341-1407.

5. Guarino N. (ed.). Formal ontology in information systems: Proceedings of the first international conference (FOIS'98), June 6-8, Trento, Italy. – IOS press, 1998. – T. 46.

6. Iivari J., Hirschheim R., Klein H. K. A paradigmatic analysis contrasting information systems development approaches and methodologies //Information systems research. – 1998. – T. 9. – №. 2. – C. 164-193.

7. Karanasios S. Toward a unified view of technology and activity: The contribution of activity theory to information systems research //Information Technology & People. – 2018. – T. 31. – №. 1. – C. 134-155.

8. Balram S., Dragicevic S. Collaborative geographic information systems: origins, boundaries, and structures //Collaborative geographic information systems. – Igi Global, 2006. – C. 1-23.

9. Garcia L., Quek F. Qualitative research in information systems: time to be subjective? //Information Systems and Qualitative Research: Proceedings of the IFIP TC8 WG 8.2 International Conference on Information Systems and Qualitative Research, 31st May–3rd June 1997, Philadelphia, Pennsylvania, USA. – Boston, MA : Springer US, 1997. – C. 444-465.

10. Birks D. F. et al. Grounded theory method in information systems research: its nature, diversity and opportunities //European Journal of Information Systems. – 2013. – T. 22. – №. 1. – C. 1-8.