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ZAMONAVIY INGLIZ BADIY ADABIYOTIDA ADABIY ALLUZIYALARNI AVTOMATIK ANIQLASH: RAQAMLI INTERTEKSTUALLIK VA MASHINALI O'QITISH

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Annotatsiya

Mazkur maqolada zamonaviy ingliz badiiy adabiyotida adabiy alluziyalarni avtomatik aniqlashda mashinali o'qitish texnologiyalarining o'rni tahlil qilinadi. Raqamli davrda intertekstuallik endi faqat tadqiqotchining intuitiv ravishda matnlararo bog'liqliklarni aniqlashi bilan cheklanmay, balki matnlar o'rtasidagi leksik, semantik va strukturaviy munosabatlarni aniqlovchi kompyuter usullari orqali ham o'rganilmoqda. Maqolada tabiiy tilni qayta ishlash (NLP), semantik o'xshashlik modellari va distant reading metodlarining ochiq hamda yashirin alluziyalarni aniqlashdagi imkoniyatlari va cheklovlari ko'rib chiqiladi. Mashinali o'qitish usullari yirik adabiy korpuslarni tahlil qilish, yashirin intertekstual bog'lanishlarni aniqlash hamda zamonaviy badiiy asarlarni avvalgi adabiy an'analar bilan qiyoslash imkonini berishi asoslab beriladi. Shu bilan birga, adabiy alluziyalarni aniqlashda madaniy xotira, muallif niyati, kinoya va kontekstual nozikliklar muhim ahamiyat kasb etishi sababli avtomatlashtirilgan tahlil inson interpretatsiyasini to'liq almashtira olmasligi ta'kidlanadi. Tadqiqot xulosasida hisoblash usullari va an'anaviy filologik tahlilni uyg'unlashtirgan gibrid yondashuv eng samarali model sifatida e'tirof etiladi.

Kalit so'zlar: raqamli intertekstuallik, mashinali o'qitish, adabiy alluziya, zamonaviy ingliz badiiy adabiyoti, tabiiy tilni qayta ishlash, distant reading, semantik o'xshashlik, kompyuter filologiyasi, matnlarni qazib olish, raqamli gumanitar fanlar.

ЦИФРОВАЯ ИНТЕРТЕКСТУАЛЬНОСТЬ И МАШИННОЕ ОБУЧЕНИЕ: АВТОМАТИЧЕСКОЕ ВЫЯВЛЕНИЕ ЛИТЕРАТУРНЫХ АЛЛЮЗИЙ В СОВРЕМЕННОЙ АНГЛИЙСКОЙ ХУДОЖЕСТВЕННОЙ ЛИТЕРАТУРЕ

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Аннотация

В данной статье рассматривается роль технологий машинного обучения в автоматическом выявлении литературных аллюзий в современной английской художественной литературе. В цифровую эпоху интертекстуальность больше не ограничивается интуитивным распознаванием текстуальных переключек отдельным исследователем, а может изучаться с помощью вычислительных методов, выявляющих лексические, семантические и структурные связи между текстами. В статье анализируются возможности и ограничения методов обработки естественного языка (NLP), моделей семантического сходства и подхода distant reading для обнаружения явных и скрытых аллюзий. Доказывается, что машинное обучение позволяет исследователям обрабатывать большие литературные корпуса, выявлять скрытые интертекстуальные закономерности и сопоставлять современную художественную литературу с предшествующими литературными традициями. Вместе с тем подчёркивается, что автоматическое выявление не может полностью заменить человеческую интерпретацию, поскольку литературная аллюзия часто зависит от культурной памяти, авторского замысла, иронии и контекстуальных нюансов. В заключении делается вывод о том, что наиболее эффективным является гибридный подход, сочетающий вычислительный

анализ и традиционную филологическую интерпретацию.

Ключевые слова: цифровая интертекстуальность, машинное обучение, литературная аллюзия, современная английская художественная литература, обработка естественного языка, distant reading, семантическое сходство, компьютерная филология, интеллектуальный анализ текстов, цифровые гуманитарные науки.

DIGITAL INTERTEXTUALITY AND MACHINE LEARNING: AUTOMATED DETECTION OF LITERARY ALLUSIONS IN CONTEMPORARY ENGLISH FICTION

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Abstract

This article examines the role of machine learning in the automated detection of literary allusions in contemporary English fiction. In the digital age, intertextuality is no longer limited to the intuitive recognition of textual echoes by individual scholars but can also be explored through computational methods that identify lexical, semantic, and structural relationships between texts. The article discusses the possibilities and limitations of using natural language processing (NLP), semantic similarity models, and distant reading techniques to detect both explicit and implicit literary allusions. It argues that machine learning can assist researchers in processing large literary corpora, uncovering hidden intertextual patterns, and comparing contemporary fiction with earlier literary traditions. At the same time, the study emphasizes that automated detection cannot fully replace human interpretation, since literary allusions often depend on cultural memory, authorial intention, irony, and contextual nuance. The article concludes that the most effective approach is a hybrid model that combines computational analysis with traditional philological interpretation.

Keywords: digital intertextuality, machine learning, literary allusion, contemporary English fiction, natural language processing, distant reading, semantic similarity, computational philology, text mining, digital humanities.

Intertextuality is one of the central concepts of modern literary studies, since every literary text exists in dialogue with previous texts, cultural codes, and artistic traditions. In contemporary English fiction, allusions to canonical works, myths, religious narratives, and earlier literary forms often function as hidden signals that enrich meaning and connect the present with the past. Traditionally, such allusions were identified through close reading, scholarly intuition, and the researcher's cultural competence. However, the growth of digital text collections has made purely manual analysis insufficient. Thousands of novels, stories, and digital texts can no longer be examined only by individual reading. Machine learning and natural language processing offer new possibilities for detecting intertextual relations at a larger scale. This article explores how automated methods can identify literary allusions in contemporary English fiction and evaluates the extent to which computational tools can support, but not replace, human philological interpretation.

Methods

The study is based on a conceptual and analytical IMRAD model that combines literary theory with the methodological principles of digital humanities. The main object of analysis is the possibility of detecting literary allusions in contemporary English fiction through machine learning techniques. The research does not construct a new software system; rather, it describes a methodological framework that may be used for automated allusion detection in literary corpora.

The proposed approach includes several stages. First, a corpus of contemporary English fiction is compared with a reference corpus consisting of canonical literary texts. Second, natural language processing tools are applied

to divide texts into smaller units, such as sentences, phrases, passages, or narrative fragments. Third, lexical matching is used to identify direct quotations and repeated expressions. Fourth, semantic similarity models are applied in order to detect indirect allusions, paraphrases, and transformed references. Fifth, structural comparison is used to identify broader narrative parallels, such as similar character functions, plot situations, or symbolic patterns.

The method also requires human validation. Automated systems may generate many possible matches, but not all of them represent meaningful literary allusions. Therefore, the final stage involves qualitative philological interpretation. A human researcher evaluates whether the detected connection is intentional, culturally significant, and contextually relevant. In this way, the method combines distant reading with close reading, allowing machine learning to support the search process while preserving the interpretive role of the literary scholar.

Results

The analysis shows that machine learning can significantly improve the detection of literary allusions in contemporary English fiction. Its first advantage is speed. A computational system can process thousands of pages and compare them with a large reference corpus within a short period of time. This makes it possible to identify textual correspondences that would remain unnoticed in traditional reading. Direct quotations, repeated phrases, and recognizable formulaic expressions can be detected with relatively high accuracy through lexical matching and n-gram analysis. The second advantage is the ability to detect indirect similarity. Semantic models can identify cases in which a modern author transforms the original wording but preserves the general meaning, emotional structure, or thematic direction of the source text. This is especially important for contemporary fiction, where allusions are often not literal but adapted to new social, cultural, or psychological contexts.

The third important result is the possibility of mapping intertextual networks. Machine learning can help reveal which authors, texts, motifs, or genres are most frequently echoed in contemporary fiction. Such mapping allows researchers to study literary influence not only through isolated examples but also as a broader cultural pattern. However, the results also indicate clear limitations. Automated systems may confuse common expressions with literary allusions. They may also detect accidental similarity where no meaningful intertextual relation exists. Moreover, machine learning cannot independently determine the aesthetic function of an allusion. It can locate a possible connection, but it cannot fully explain its interpretive value without human analysis.

Discussion

The use of machine learning in the study of literary allusions changes the methodological landscape of literary research. Traditional philology is based on close attention to textual detail, historical context, and interpretive nuance. Digital methods, by contrast, operate through scale, frequency, pattern recognition, and statistical comparison. These two approaches should not be viewed as contradictory. Their combination creates a productive model for the study of digital intertextuality.

Machine learning is particularly useful when literary influence is dispersed across large corpora. Contemporary English fiction often reworks classical plots, mythological structures, and canonical phrases in subtle ways. A reader may recognize a direct reference to Shakespeare, Milton, or the Bible, but may overlook less obvious semantic or structural echoes. Computational tools can help identify these hidden relations and provide the scholar with new material for interpretation.

At the same time, the detection of allusion is not the same as the interpretation of allusion. A literary allusion is meaningful only within a specific context. It may express irony, criticism, parody, homage, or ideological revision. For example, a contemporary novel may refer to a classical text not to imitate it, but to challenge its values. Such interpretive distinctions require cultural knowledge, historical awareness, and critical judgment. Therefore, automated allusion detection must remain a supportive instrument. It expands the researcher's field of vision, but it does not replace the scholar's responsibility to interpret. The most effective model is a hybrid one: machine learning identifies possible intertextual links, while the human critic evaluates their literary, cultural, and aesthetic significance. This cooperation allows digital humanities to preserve the depth of traditional literary analysis while

gaining the advantages of computational scale.

Conclusion

Machine learning offers powerful tools for the automated detection of literary allusions in contemporary English fiction. It can process large corpora, identify lexical and semantic similarities, trace repeated motifs, and help construct broader maps of literary influence. These possibilities make computational methods valuable for the study of digital intertextuality. However, automated systems cannot fully understand the cultural, emotional, and aesthetic meaning of an allusion. They may detect textual proximity, but interpretation requires human judgment. Literary allusions depend on context, intention, irony, and historical memory, which cannot be reduced to algorithmic similarity alone. For this reason, the future of intertextual research lies in a hybrid methodology. Machine learning should be used as an analytical assistant, while final interpretation must remain within the domain of critical philological thought.

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