ALISHER NAVOI'S WORKS IN THE CONTEXT OF DIGITAL HUMANITIES: NEW METHODOLOGICAL POSSIBILITIES

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Abstract: This thesis explores new methodological approaches to the study of Alisher Navoi's literary heritage within the framework of Digital Humanities. It focuses on digital corpus analysis, distant reading, topic modeling, stylometry, semantic analysis, network analysis, and the Graphs, Maps, Trees model. The study demonstrates how computational methods, combined with traditional philological interpretation, can reveal the structural, semantic, intertextual, and cultural patterns of Navoi's works and expand the methodological scope of contemporary Navoi studies.

Keywords: Alisher Navoi, Digital Humanities, digital corpus, distant reading, topic modeling, stylometry, semantic analysis.

Digital Humanities (DH) represents an interdisciplinary research paradigm that integrates computational technologies with methods of the humanities. In literary studies, this approach makes it possible to examine not only individual texts through close reading but also large-scale textual collections by identifying quantitative, semantic, structural, and intertextual patterns. In this context, the literary heritage of Alisher Navoi is particularly suitable for digital research due to its extensive corpus, multilingual character, rich intertextual connections, and close relationship with the literary and intellectual traditions of the Timurid period.

One of the principal methodological concepts of Digital Humanities is Franco Moretti's distant reading, which shifts attention from individual passages toward large-scale textual patterns [1]. Matthew L. Jockers further developed this approach through the concept of macroanalysis, demonstrating the potential of computational methods for studying literary history on a large scale [2]. Applied to Navoi studies, these approaches make it possible to move from the analysis of separate works toward a systematic examination of his literary heritage as an interconnected textual and cultural system.

The methodological foundation of such research is a reliable digital corpus of Navoi's works. Digital resources such as the Alisher Navoi Corpus and the NAVOIY-TERRA Corpus provide important opportunities for computational analysis. However, a research-oriented corpus requires more

than simple digitization. It should include philological verification, normalization of orthographic variants, correction of OCR errors, lemmatization, morphological annotation, metadata, and, where necessary, comparison of different textual editions. Thus, digital corpus construction should be regarded as a form of scholarly infrastructure that connects textual criticism with computational analysis.

Corpus linguistics allows researchers to determine the frequency, distribution, and contextual relationships of lexical units and semantic fields. In Navoi's works, concepts such as ishq, adolat, ilm, saxovat, nafs, vafo, fano, and komillik can be examined across different works and genres. This makes it possible to identify not only the frequency of individual words but also their semantic environments and conceptual relationships. Consequently, quantitative corpus data can provide additional evidence for studying Navoi's conceptual and linguistic worldview.

Another promising method is topic modeling, which automatically identifies recurring thematic structures within large textual collections. Applied to Navoi's corpus, it may reveal thematic clusters related to love, morality, knowledge, justice, kingship, mysticism, and human perfection. Nevertheless, computationally identified topics require philological interpretation because the historical vocabulary and complex semantic structures of Navoi's language cannot always be adequately represented through purely statistical models [6].

Stylometry offers another significant methodological possibility. Statistical analysis of vocabulary, function words, sentence structures, and other stylistic features can be used to compare texts, genres, and stylistic periods. John Burrows's Delta method has become one of the influential approaches in computational stylistics and authorship studies [7]. In Navoi studies, stylometry can therefore contribute not only to questions of attribution but also to the investigation of stylistic differentiation among genres and individual works.

Semantic analysis can be enhanced through word embeddings and other computational models of semantic relationships. These methods make it possible to identify lexical associations within large textual datasets and examine how concepts are connected through recurring contexts. Such analysis could provide new perspectives on the semantic organization of Navoi's literary world. However, computational similarity should not be automatically equated with literary meaning: the philosophical, mystical, religious, and aesthetic dimensions of Navoi's language require contextual and philological interpretation.

Natural Language Processing (NLP) and Named Entity Recognition (NER) also offer important possibilities. Automatic identification of personal names,

geographical locations, historical figures, literary works, dynasties, and other entities can transform unstructured textual information into structured research data. These data can subsequently be used for network, spatial, and intertextual analysis.

A particularly productive framework in this regard is Franco Moretti's "Graphs, Maps, Trees" model [9]. The three forms of abstraction provide different ways of representing literary relationships. Graphs can model connections among authors, characters, historical figures, works, concepts, and intertextual sources. In Navoi studies, such graphs could visualize the literary and intellectual relationships connecting Navoi with Nizami Ganjavi, Amir Khusrau, Jami, and other representatives of the Persian-Turkic literary tradition. Maps make it possible to represent the geographical and cultural spaces reflected in literary texts. References to cities, regions, countries, and historical centers in Navoi's works can be mapped and analyzed in relation to historical memory, cultural exchange, and the intellectual geography of the Timurid period. This approach can reveal spatial patterns that are difficult to perceive through conventional textual analysis alone.

Trees, in turn, can represent genealogical and typological relationships among genres, plots, motifs, and poetic models. This is particularly relevant to the study of Navoi's Khamsa within the broader Khamsa-writing tradition. The relationship between Nizami's Persian model and Navoi's Turkic Khamsa should not be reduced to simple imitation. It can be understood as a complex process of creative transformation, adaptation, and cultural re-coding. Combining tree and graph models can therefore provide a more systematic representation of literary continuity and transformation.

Another important methodological direction is the creation of a knowledge graph. A digital knowledge model based on relations such as "Navoi – work – character – motif – concept – historical figure – place – source" could represent his literary heritage as an interconnected system of knowledge. Such a model would facilitate interdisciplinary research at the intersection of literary studies, linguistics, history, cultural studies, and digital archival research.

Digital methods are also particularly valuable for examining intertextuality. Navoi's works are deeply connected with Persian, Turkic, Arabic, Islamic, philosophical, and Sufi literary traditions. Computational comparison can assist in identifying lexical correspondences, recurring motifs, thematic parallels, and structural similarities between Navoi and his predecessors. This creates new opportunities for examining the relationship between imitation, literary continuity, and creative transformation.

At the same time, the application of Digital Humanities to classical Uzbek

literature presents specific methodological challenges. Historical linguistic forms, Arabic and Persian lexical elements, orthographic variation, manuscript differences, and OCR errors can affect computational results. Therefore, the development of historical-language NLP, accurate lemmatization, morphological annotation, and multilingual computational models remains an important direction for future research.

The most productive methodological principle is consequently the combination of distant reading and close reading. Computational methods can reveal large-scale patterns, correlations, and previously unnoticed relationships, while traditional philological analysis explains their historical, semantic, aesthetic, and cultural significance. Such a mixed-method approach prevents both technological reductionism and the limitations of purely individual textual interpretation [3].

Thus, Digital Humanities opens a new methodological dimension for contemporary Navoi studies. Digital corpus construction, corpus linguistics, distant reading, topic modeling, stylometry, semantic analysis, NLP, NER, network analysis, geospatial mapping, knowledge graphs, and Moretti's Graphs, Maps, Trees model provide complementary tools for studying Navoi's heritage as a complex literary and cultural system. Their greatest value lies not in replacing traditional philology but in expanding its analytical possibilities. The integration of computational methods with philological interpretation can therefore contribute to a deeper understanding of the structural, semantic, intertextual, and cultural dimensions of Navoi's works and strengthen their representation within the contemporary global Digital Humanities research space.

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