

Towards an AI-Driven Paradigm of Odia Literary Studies

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Abstract—Artificial Intelligence is reshaping the humanities by opening new possibilities for interpretation, preservation, and dissemination of literary knowledge. In the context of Odia literature, AI should not be viewed merely as a technological intervention but as a transformative intellectual framework that enriches textual scholarship, translation studies, digital archiving, manuscript preservation, and cultural memory. The integration of Digital Humanities, ICT, and AI enables innovative methods for studying classical and contemporary Odia texts, documenting folk and tribal traditions, and expanding global access to the rich literary heritage of Odisha. At the same time, it raises important questions regarding authenticity, ethics, linguistic identity, and human creativity. This paper examines how AI-driven approaches can strengthen teaching, research, and critical inquiry in Odia literary studies while preserving the aesthetic and cultural essence of the language. It argues that a balanced synthesis of literary scholarship and digital innovation can create a new paradigm for the future of Odia studies in higher education.

Index Terms—Artificial Intelligence, Odia Literature, Digital Humanities, Literary Studies, ICT, Translation Studies, Cultural Heritage, Higher Education.

I. Introduction

Literature is the living consciousness of a civilization. It preserves the collective memory, cultural imagination, philosophical reflections, and aesthetic sensibilities of a people across generations. Among the great literary traditions of India, Odia literature occupies a unique and distinguished position because of its remarkable continuity, linguistic richness, devotional depth, folk wisdom, and creative diversity. From the monumental works of Sarala Das and Jagannath Das to modern poetry, fiction, criticism, and tribal narratives, Odia literature has continuously renewed itself while safeguarding the cultural identity of Odisha.

In the contemporary era, literary studies are entering a new intellectual landscape shaped by Artificial Intelligence (AI), Digital Humanities, and Information and Communication Technology (ICT). These technological developments should not be understood merely as instruments of automation; rather, they offer new modes of reading, interpreting, preserving, and disseminating literary knowledge. Technology cannot replace the creative spirit of literature, but it can expand the possibilities of literary scholarship by enabling digital archives, intelligent text analysis, manuscript preservation, machine-assisted translation, and multilingual accessibility.

For Odia literary studies, this transformation is especially significant. A vast corpus of manuscripts, folk songs, oral traditions, regional dialects, and tribal cultural expressions still awaits systematic digital preservation and scholarly documentation. The thoughtful integration of AI and ICT can create new

opportunities for documenting these invaluable resources, encouraging interdisciplinary research, and making Odia literary heritage visible to a global academic community. In this context, Digital Humanities emerges as a bridge between classical literary scholarship and contemporary technological innovation.

At the same time, the changing vision of higher education emphasizes research-oriented learning, digital pedagogy, and collaborative knowledge creation. AI-enabled educational resources, digital repositories, interactive e-content, and intelligent translation systems can strengthen teaching and research in Odia studies while inspiring new critical approaches to literary interpretation. The objective is not to subordinate literature to technology but to employ technology in the service of literature, language, and cultural preservation.

Therefore, this study proposes an AI-driven paradigm for Odia literary studies that seeks to harmonize traditional literary wisdom with contemporary digital innovation. Such a paradigm has the potential to preserve the aesthetic essence of Odia literature, revitalize its research methodologies, strengthen its cultural memory, and enhance its national as well as international academic visibility.

II. Review of Literature

Odia literature is not merely a linguistic tradition but a profound expression of the historical consciousness, cultural identity, philosophical wisdom, and aesthetic imagination of Odisha. Over the centuries, it has evolved through a continuous dialogue between mythology and modernity, devotion and rationality, folklore and intellectual inquiry, thereby establishing itself as one of the most distinguished literary traditions of the Indian subcontinent. Consequently, scholars from different generations have explored Odia literature from historical, cultural, comparative, linguistic, and critical perspectives, enriching its academic discourse.

The foundations of Odia literary consciousness were laid by Sarala Das, whose monumental Mahabharata transformed the vernacular language into a powerful medium of literary expression and cultural representation. This glorious tradition attained remarkable philosophical and devotional depth through the works of Jagannath Das, Balarama Das, Achyutananda Das, Ananta Das, and Jasobanta Das—the celebrated Panchasakha—whose writings harmonized spirituality, ethics, social consciousness, and literary excellence. Their contributions continue to shape the intellectual framework of Odia literary criticism and cultural studies.

The transition to modernity further expanded the horizons of Odia literature through the pioneering vision of Fakir Mohan Senapati. The poetic imagination of Radhanath Ray, the educational and literary contributions of Madhusudan Rao, the lyrical brilliance of Gangadhar Meher, the romantic sensibility of Nanda Kishore Bal, and the nationalist ideals of Gopabandhu Das collectively enriched the literary and cultural landscape of Odisha. In the modern and contemporary period, eminent writers such as Gopinath Mohanty, Surendra Mohanty, Kanhu Charan Mohanty, Manoj Das, and Sitakanta Mahapatra broadened the scope of Odia literary studies through their remarkable contributions to fiction, poetry, criticism, folklore, translation, and philosophical reflection, earning recognition at both national and international levels.

The existing body of research has extensively examined the historical evolution of Odia literature, its poetic traditions, narrative techniques, comparative dimensions, translation studies, folk culture, tribal heritage, and socio-cultural contexts. Nevertheless, most of these scholarly works have remained within the boundaries of conventional literary criticism and historical interpretation. While such contributions have significantly strengthened Odia literary scholarship, comparatively little attention has been devoted to the possibilities offered by Digital Humanities, Artificial Intelligence, and ICT-enabled literary research.

In contemporary literary scholarship, Digital Humanities has emerged as a transformative discipline integrating technology with the study of language, literature, and culture. Digital archives, corpus-based analysis, computational criticism, machine-assisted translation, and intelligent information systems are redefining the ways in which literary texts are preserved, interpreted, and disseminated. However, despite the immense richness of Odia manuscripts, palm-leaf texts, folk songs, oral traditions, regional dialects, and tribal narratives, systematic studies connecting these resources with AI-driven methodologies remain limited.

Therefore, a significant research gap exists at the intersection of Odia Literary Studies, Artificial Intelligence, and Digital Humanities. The present study seeks to address this gap by proposing a new intellectual framework in which technology functions not as a substitute for literary creativity but as a scholarly instrument for preserving cultural memory, enhancing literary interpretation, expanding translation studies, and strengthening the global academic visibility of Odia language and literature. Such a perspective aspires to harmonize the timeless aesthetic spirit of Odia literature with the transformative possibilities of the digital age.

III. Research Gap

Although Odia literature has attracted sustained scholarly attention for its classical heritage, devotional traditions, modern literary movements, comparative studies, folklore, translation, and cultural discourse, the majority of existing research remains rooted in conventional literary criticism and historical analysis. The rich intellectual legacy created by Sarala Das, the Panchasakha tradition, Fakir Mohan Senapati, Radhanath Ray, Gangadhar Meher, Gopinath Mohanty, Manoj Das, Sitakanta Mahapatra, and many other distinguished writers has been widely interpreted from aesthetic, linguistic, and socio-cultural perspectives. These studies have significantly enriched the understanding of Odia literary history and its contribution to Indian literature.

However, the rapidly evolving field of Artificial Intelligence, Digital Humanities, and ICT-enabled literary scholarship has opened new avenues for literary research that remain comparatively unexplored in the context of Odia literature. While global scholarship increasingly employs digital archives, computational textual analysis, corpus linguistics, machine-assisted translation, and intelligent knowledge systems for literary interpretation, similar interdisciplinary initiatives have yet to receive systematic academic attention in Odia literary studies.

The challenge becomes even more significant because Odisha possesses an invaluable literary and cultural treasury comprising palm-leaf manuscripts, medieval texts, folk songs, tribal oral narratives, regional dialects, and indigenous knowledge systems. A considerable portion of this heritage is either inadequately digitized or insufficiently integrated into contemporary research and pedagogy. Consequently, opportunities for international visibility, interdisciplinary collaboration, and technology-assisted literary scholarship remain underutilized.

Therefore, a substantial research gap exists between the classical richness of Odia literary tradition and the contemporary possibilities offered by Artificial Intelligence and Digital Humanities. The present study seeks to bridge this gap by developing a scholarly framework in which technology serves as an instrument for literary preservation, critical interpretation, translation, research innovation, and global dissemination, while safeguarding the aesthetic, cultural, and intellectual identity of Odia literature.

IV. Objectives of the Study

1. To examine the emerging relationship between Artificial Intelligence and Odia Literary Studies in the context of contemporary humanities research.
2. To analyze how Digital Humanities and ICT can strengthen the preservation, interpretation, and dissemination of the rich literary heritage of Odisha.
3. To explore the application of AI-assisted technologies in the study of classical, modern, folk, tribal, and translated Odia literature.
4. To investigate the potential of digital tools for the preservation and documentation of palm-leaf manuscripts, folk traditions, regional dialects, and indigenous cultural knowledge.
5. To evaluate the role of AI-enabled pedagogical practices, digital repositories, and e-content in enhancing the teaching and learning of Odia language and literature in higher education.
6. To propose an interdisciplinary and literature-centered framework that harmonizes the timeless aesthetic values of Odia literature with the innovative possibilities of Artificial Intelligence, thereby promoting its sustainable development and global academic visibility.

V. Research Methodology

The present study employs a qualitative, interpretative, analytical, and interdisciplinary research methodology to explore the evolving relationship between Artificial Intelligence and Odia Literary Studies. The research is primarily conceptual and literature-oriented, seeking to understand how emerging digital technologies can contribute to the preservation, interpretation, dissemination, and future development of the rich literary heritage of Odisha. Rather than relying on statistical investigation, the study is grounded in critical literary analysis and intellectual interpretation.

The research is based on an extensive examination of primary and secondary sources. Primary sources include representative texts from the classical, medieval, modern, and contemporary traditions of Odia literature, encompassing devotional writings, poetry, fiction, folk literature, tribal narratives, and translated works. Secondary sources consist of scholarly books, peer-reviewed journal articles, edited volumes, conference proceedings, policy documents, and authentic academic studies related to Artificial Intelligence, Digital Humanities, ICT, language technology, and literary scholarship.

Methodologically, the study adopts an interdisciplinary perspective, integrating the principles of literary criticism with the emerging domains of Digital Humanities and Artificial Intelligence. It does not perceive technology as a replacement for literary imagination or human creativity; instead, it views AI as an intellectual and methodological instrument capable of enriching literary research through digital preservation, computational analysis, intelligent translation, electronic documentation, and knowledge dissemination.

A descriptive and interpretative approach has been employed to examine the possibilities of applying AI to the study of Odia literature. Particular attention is given to the preservation of palm-leaf manuscripts, folk traditions, tribal oral narratives, regional dialects, and the vast cultural memory embedded within Odia literary heritage. The study further investigates how ICT-enabled pedagogy, digital repositories, and e-content development can strengthen teaching, learning, and research in Odia language and literature within the framework of contemporary higher education.

In addition, the research follows a comparative and thematic approach, identifying points of convergence between the timeless aesthetic values of Odia literary tradition and the transformative possibilities of modern digital technologies. Through critical synthesis and scholarly interpretation, the study seeks to establish a meaningful dialogue between literary heritage and technological innovation, thereby proposing a sustainable model for the preservation, advancement, and global visibility of Odia literature in the twenty-first century.

Therefore, the methodology of the present research may be characterized as qualitative, analytical, descriptive, interpretative, comparative, and interdisciplinary, with its central objective being the harmonious integration of literary scholarship and digital innovation while safeguarding the cultural and intellectual identity of Odia literature.

VI. AI and Odia Literary Studies

Odia literature stands as one of the most enduring expressions of Odisha's cultural consciousness, philosophical insight, historical memory, and artistic imagination. From the immortal creations of Sarala Das and the spiritual vision of the Panchasakha poets to the remarkable contributions of Fakir Mohan Senapati, Radhanath Ray, Gangadhar Meher, Gopinath Mohanty, Manoj Das, and Sitakanta Mahapatra, the Odia literary tradition has continuously enriched the intellectual and cultural heritage of India. Its greatness lies not merely in the beauty of its language but in its capacity to preserve the collective identity, values, emotions, and lived experiences of society across centuries.

In the contemporary era, the emergence of Artificial Intelligence (AI) has introduced new possibilities for literary scholarship and cultural preservation. Yet, AI should never be regarded as a substitute for literary imagination or human creativity. Literature is the embodiment of emotion, intuition, philosophy, and aesthetic sensibility—qualities that remain uniquely human. Therefore, the significance of AI in Odia literary studies lies not in creating literature but in strengthening its preservation, interpretation, accessibility, and scholarly engagement.

The rich literary heritage of Odisha encompasses palm-leaf manuscripts, medieval texts, folk songs, tribal narratives, oral traditions, regional dialects, and indigenous knowledge systems. A considerable portion of this invaluable legacy remains scattered, fragile, or insufficiently documented. AI-assisted digitization, intelligent cataloguing, optical character recognition, digital archiving, and language technologies can contribute significantly to safeguarding these cultural treasures while making them accessible to researchers and readers across the world.

Furthermore, AI has the potential to enrich translation studies, comparative literary research, corpus development, and digital documentation, thereby creating new avenues for interdisciplinary scholarship. Through the broader framework of Digital Humanities, traditional literary criticism can be complemented by innovative technological methodologies without compromising the aesthetic integrity or cultural authenticity of Odia literature.

Thus, the relationship between AI and Odia Literary Studies should be understood as a meaningful dialogue between tradition and innovation. Technology must serve literature, not dominate it. When employed with scholarly responsibility and cultural sensitivity, Artificial Intelligence can become a powerful instrument for preserving Odisha's literary legacy, expanding its academic horizons, and enhancing its visibility within the global community of literary studies.

VII. Evolution of Odia Literary Studies in the Digital Era

The evolution of Odia literary studies is not merely the history of a regional language; it is the intellectual, cultural, and spiritual journey of Odisha itself. For centuries, Odia literature has preserved the collective memory of society by embodying its philosophy, devotional traditions, ethical values, folklore, and artistic imagination. Its enduring legacy has secured a distinguished place among the major literary traditions of India.

The foundations of this remarkable tradition were laid by Adikabi Sarala Das, whose Odia Mahabharata transformed the vernacular into a powerful vehicle of literary expression and cultural identity. The literary landscape was subsequently enriched by the Panchasakha—Balarama Das, Jagannath Das, Achyutananda Das, Ananta Das, and Jasobanta Das—whose works blended spirituality, philosophy, social consciousness, and poetic excellence, leaving a lasting influence on Odia literary thought.

The transition to the modern age introduced new intellectual currents through Fakir Mohan Senapati, whose realism reshaped Odia prose and narrative art. The contributions of Radhanath Ray, Madhusudan Rao, Gangadhar Meher, Nanda Kishore Bal, Gopabandhu Das, Gopinath Mohanty, Surendra Mohanty, Manoj Das, Kanhu Charan Mohanty, and Sitakanta Mahapatra further expanded the horizons of Odia literature by integrating humanism, national consciousness, philosophical reflection, and global literary perspectives.

Traditionally, Odia literary studies centred on textual criticism, historical inquiry, comparative interpretation, and aesthetic appreciation. These approaches established a strong scholarly foundation and preserved the richness of Odisha's literary heritage. However, the twenty-first century has ushered in a digital era in which literary knowledge is increasingly created, preserved, accessed, and interpreted through technological means.

This transformation is particularly significant because Odisha possesses an extraordinary repository of palm-leaf manuscripts, medieval texts, folk songs, tribal narratives, oral traditions, regional dialects, and indigenous knowledge systems. Many of these invaluable resources remain fragile or insufficiently digitized. Consequently, the digital era presents not only a technological opportunity but also an academic responsibility to preserve and disseminate this heritage for future generations.

The evolution of Odia literary studies in the digital era should therefore be understood as a continuation of its timeless tradition rather than a departure from it. Modern digital scholarship, when guided by literary sensitivity and cultural responsibility, can strengthen research, preservation, translation, and global accessibility. In this harmonious dialogue between tradition and innovation, Odia literature enters the international academic sphere while preserving its unique linguistic beauty, aesthetic dignity, and cultural authenticity.

VIII. ICT and Digital Pedagogy in Odia Studies

The integration of Information and Communication Technology (ICT) into Odia Studies has initiated a significant transformation in the teaching, learning, research, and dissemination of Odia language and literature. In the twenty-first century, literary education is no longer confined to printed texts and conventional classroom practices; rather, it has entered a dynamic digital environment where knowledge is created, preserved, and shared through technological platforms. Consequently, ICT has become an essential academic resource for strengthening Odia literary studies and enhancing its relevance in contemporary higher education.

Odia literature, with its rich tradition extending from the works of Sarala Das and the Panchasakha to the writings of Fakir Mohan Senapati, Gangadhar Meher, Gopinath Mohanty, Manoj Das, and Sitakanta Mahapatra, represents a vast intellectual and cultural heritage. The study of this heritage has traditionally

relied upon classroom teaching, printed books, libraries, and textual interpretation. While these methods remain indispensable, they often limit wider accessibility and interdisciplinary engagement. ICT provides new possibilities by transforming literary learning into a more interactive, flexible, and research-oriented process.

The development of digital learning resources has become one of the most valuable contributions of ICT to Odia literary studies. E-content modules, digital study materials, PowerPoint presentations, recorded lectures, multimedia resources, and virtual classrooms enable students to engage with literary texts beyond the physical boundaries of educational institutions. These digital platforms encourage self-learning, critical analysis, collaborative discussion, and independent research, thereby enriching the overall academic experience.

Another significant contribution of ICT lies in the digital preservation and dissemination of Odisha's literary and cultural heritage. Odisha possesses an extraordinary repository of palm-leaf manuscripts (Talapatra Pothi), folk literature, tribal narratives, oral traditions, regional dialects, and indigenous knowledge systems. The digitization and electronic documentation of these resources through institutional repositories, digital libraries, and online archives ensure their long-term preservation while making them accessible to scholars across the world. Thus, ICT serves not merely as a teaching tool but also as an instrument of cultural conservation and academic documentation.

Furthermore, ICT has strengthened research and scholarly communication in Odia studies through webinars, online conferences, digital repositories, academic networking platforms, and open-access publications. Such technological interventions facilitate collaboration among researchers, promote comparative literary studies, support translation research, and enhance the international visibility of Odia literature. The increasing availability of digital resources also enables postgraduate students and researchers to access authentic academic materials more efficiently than ever before.

The growing emphasis on digital education under the National Education Policy (NEP 2020) further highlights the importance of ICT in higher education. The policy advocates multidisciplinary learning, technology-enabled pedagogy, digital content development, and research innovation, all of which provide new opportunities for the advancement of Odia language and literature. Within this evolving educational framework, ICT bridges the gap between classical literary scholarship and contemporary digital learning practices.

Therefore, ICT should be regarded not simply as a technological facility but as a scholarly bridge connecting the timeless literary heritage of Odisha with the emerging digital knowledge society. Its thoughtful integration into Odia studies strengthens teaching, promotes research, preserves cultural memory, and expands the national and international reach of Odia literature. In this sense, ICT complements rather than replaces the humanistic spirit of literary scholarship, ensuring that the rich literary tradition of Odisha continues to flourish in the digital age.

IX. AI and Digital Preservation of Odisha's Folk, Tribal and Cultural Heritage

Odisha is a land where literature, folklore, tribal traditions, religion, performing arts, and indigenous knowledge systems have flourished together for centuries, creating a unique civilizational heritage. The literary identity of Odisha is deeply intertwined with its Jagannath culture, Talapatra (palm-leaf) manuscripts, Pattachitra paintings, Odissi and Gotipua traditions, Pala, Daskathia, Ravana Chhaya, Kandhei Nacha, Ghoda Nacha, folk songs, oral narratives, regional dialects, and the rich cultural expressions of numerous tribal communities. These diverse traditions collectively preserve the historical memory, philosophical wisdom, and aesthetic consciousness of Odia society and therefore deserve systematic preservation for future generations.

In the contemporary digital era, Artificial Intelligence (AI) has emerged as a significant scholarly instrument for protecting this invaluable heritage through intelligent documentation, digital archiving, Optical Character Recognition (OCR), speech recognition, image analysis, metadata generation, and multilingual information retrieval. AI does not replace the cultural essence of these traditions; rather, it facilitates their preservation, organization, accessibility, and scholarly interpretation.

A noteworthy example is the large-scale digitisation initiative undertaken by the Odisha State Archives and the Manuscript Resource Centre, where approximately 65,000 palm-leaf manuscripts have been documented for digital preservation. These manuscripts preserve invaluable knowledge relating to Odia literature, religion, philosophy, medicine, astronomy, history, temple traditions, and indigenous knowledge systems. Their digitisation protects fragile materials from physical deterioration while enabling researchers to access them through digital platforms for future literary and historical investigations.

Similarly, the Odisha State Museum houses one of the most important collections of Talapatra manuscripts, archaeological objects, and cultural artefacts associated with Odisha's literary history. The application of AI-assisted cataloguing, OCR technology, and intelligent text recognition can transform these collections into searchable digital archives, thereby expanding opportunities for literary scholarship, comparative studies, and international academic collaboration.

The relevance of AI becomes even more significant in preserving Odisha's folk and tribal heritage. The state is home to a remarkable diversity of cultural traditions expressed through Pala, Daskathia, Ravana Chhaya, Kandhei Nacha, Ghoda Nacha, Pattachitra, Gotipua, Odissi, Jagannath traditions, folk ballads, ritual performances, and the oral literature of numerous tribal communities. Since many of these traditions have historically been transmitted orally, they remain vulnerable to gradual disappearance due to modernization and changing socio-cultural conditions. AI-enabled speech recognition, multilingual transcription, intelligent metadata generation, and digital repositories can systematically document these living traditions and preserve them for future research and education.

Beyond manuscripts and oral traditions, Artificial Intelligence is increasingly being employed for the digital preservation of cultural monuments and heritage landscapes. Projects such as Tirtha, which utilize computer vision and AI technologies to create three-dimensional digital models of heritage monuments, demonstrate how advanced digital methods can safeguard architectural and cultural heritage while making them accessible to scholars and the global community through virtual platforms.

Therefore, the integration of Artificial Intelligence with Odia literary studies should be understood as a meaningful collaboration between technology and the humanities. AI serves as a powerful academic tool for documenting, preserving, interpreting, and disseminating Odisha's rich folk, tribal, literary, and cultural heritage, while the creativity, emotional depth, and cultural identity embodied in these traditions continue to remain fundamentally human achievements. Through such interdisciplinary collaboration, the literary and cultural legacy of Odisha can attain greater national and international visibility while being securely transmitted to future generations.

X. Translation Studies and Comparative Literary Perspectives

Within the emerging paradigm of AI-driven Odia Literary Studies, translation has assumed a transformative role in expanding the intellectual and cultural boundaries of Odia literature. Translation is not merely the linguistic transfer of a text from one language to another; rather, it is a process of cultural interpretation through which the literary imagination, philosophical ideas, and historical experiences of a

community become accessible to wider audiences. In this sense, translation serves as a bridge connecting the regional literary heritage of Odisha with the broader traditions of Indian and world literature.

The evolution of Odia literature itself demonstrates the creative significance of translation and adaptation. The Odia Mahabharata composed by Sarala Das was not a literal rendering of the Sanskrit epic but a creative re-interpretation that incorporated the language, folklore, and socio-cultural ethos of Odisha. Literary historians regard this work as a landmark in the formation of an independent Odia literary identity and as the foundation of a national literary tradition.

Similarly, the devotional works of Jagannath Das and the broader literary contributions of the Panchasakha tradition transformed philosophical and religious knowledge into a language that could be understood by the common people. This process illustrates that translation and adaptation have historically functioned as instruments of democratizing knowledge and strengthening the cultural consciousness of Odisha rather than merely reproducing earlier texts.

In the contemporary digital era, Artificial Intelligence (AI) and Digital Humanities are opening new possibilities for translation studies and comparative literary research. AI-assisted translation systems, multilingual language models, corpus-based linguistic analysis, terminology management, and digital lexicography facilitate the preliminary translation, annotation, and organization of literary texts. These technologies are particularly significant for the preservation and dissemination of Talapatra manuscripts, folk literature, tribal narratives, regional dialects, and oral traditions, many of which remain underrepresented in global scholarship.

Recent computational research further demonstrates that Odia is gradually entering the domain of advanced language technology. The development of the Universal Dependency Treebank for the Odia language provides annotated linguistic resources that support Natural Language Processing, machine translation, and future AI applications for Odia literary studies. Likewise, research on Part-of-Speech tagging and deep learning approaches indicates growing opportunities for corpus development, digital text analysis, and intelligent translation systems for the Odia language.

Comparative literary perspectives further strengthen the academic significance of Odia studies by situating Odia literature within the wider framework of Indian Knowledge Systems and global literary traditions. Comparative analysis with Sanskrit, Bengali, Hindi, Assamese, Telugu, Tamil, Marathi, and English literature reveals both shared civilizational values and distinctive regional characteristics. Such interdisciplinary scholarship promotes intercultural dialogue, enriches literary criticism, and enhances the international visibility of Odia literature.

Nevertheless, Artificial Intelligence should be regarded as an academic facilitator rather than an autonomous interpreter of literature. Literary texts embody symbolism, aesthetic sensibility, emotional depth, and cultural memory that cannot be fully reproduced through algorithmic processing alone. Human scholarship remains indispensable for preserving contextual meaning and literary authenticity, while AI functions as a complementary instrument that expands accessibility, documentation, multilingual dissemination, and comparative literary research.

Therefore, within an AI-driven paradigm of Odia Literary Studies, translation and comparative literary perspectives emerge as essential pillars for preserving literary heritage, fostering interdisciplinary scholarship, and promoting the global recognition of Odia literature. The harmonious integration of Artificial Intelligence

with human literary interpretation has the potential to transform Odia studies into a digitally empowered and internationally connected field while safeguarding its unique linguistic and cultural identity.

XI. Opportunities under NEP 2020 and Higher Education

The introduction of the National Education Policy (NEP) 2020 has created a transformative framework for the modernization of higher education in India by emphasizing multidisciplinary learning, digital education, research innovation, Indian Knowledge Systems (IKS), skill development, and technology-enabled pedagogy. These policy initiatives present significant opportunities for the advancement of Odia Language and Literary Studies, particularly when integrated with Artificial Intelligence (AI), Information and Communication Technology (ICT), and Digital Humanities. Thus, the emerging educational paradigm provides a conducive environment for reimagining Odia literary scholarship in the digital age.

One of the most significant contributions of NEP 2020 is its emphasis on the promotion of Indian languages and classical knowledge traditions. As one of the Classical Languages of India, Odia possesses a rich literary heritage extending from Sarala Das, Jagannath Das, and the Panchasakha tradition to modern literary figures such as Fakir Mohan Senapati, Gangadhar Meher, Gopinath Mohanty, Manoj Das, and Sitakanta Mahapatra. The policy creates new academic possibilities for integrating these literary traditions into multidisciplinary teaching, research, and digital learning environments, thereby strengthening both regional identity and national cultural consciousness.

NEP 2020 also advocates the extensive use of digital technologies in higher education through e-content development, virtual learning platforms, blended learning, academic repositories, and online research resources. These initiatives provide unprecedented opportunities for developing digital archives of Odia literature, AI-assisted learning modules, interactive classrooms, and multilingual educational resources. Such innovations can significantly improve accessibility for students, researchers, and international scholars interested in Odia literary and cultural studies.

Another important opportunity lies in the promotion of research and innovation. The policy encourages interdisciplinary research that combines humanities with emerging technologies. In this context, the integration of AI, Natural Language Processing (NLP), corpus linguistics, digital lexicography, manuscript digitization, and translation technologies can open new avenues for Odia literary scholarship. The creation of digital corpora, annotated literary databases, and intelligent research tools would greatly enhance the scientific study of Odia language and literature while preserving its cultural authenticity.

Furthermore, NEP 2020 emphasizes employability and skill development, encouraging students to acquire digital competencies alongside disciplinary knowledge. For students of Odia literature, this creates opportunities in areas such as digital publishing, language technology, AI-assisted translation, cultural documentation, digital archiving, heritage management, academic editing, and e-content development. Consequently, Odia literary studies can evolve from a traditionally text-oriented discipline into a multidisciplinary field connected with contemporary knowledge economies.

The policy also supports the internationalization of Indian higher education by promoting academic collaboration, multilingual education, and global research engagement. Through AI-assisted translation, digital repositories, and open-access scholarly platforms, the literary heritage of Odisha can become more visible within international academic discourse. Such initiatives will not only strengthen comparative literary studies but also contribute to the global recognition of Odia language and literature.

Therefore, the opportunities created under NEP 2020 should be viewed as a transformative foundation for establishing an AI-driven paradigm of Odia Literary Studies. By harmonizing literary scholarship with digital innovation, the policy has the potential to preserve Odisha's rich cultural heritage, encourage interdisciplinary research, enhance employability, and expand the global visibility of Odia literature while maintaining its linguistic originality and cultural identity.

XII. Challenges and Ethical Concerns

The emergence of Artificial Intelligence (AI) has ushered in a transformative phase in Odia Literary Studies, opening new possibilities for digital preservation, manuscript analysis, translation, corpus development, and technology-enabled pedagogical innovation. Nevertheless, every intellectual revolution is accompanied by ethical responsibilities and scholarly challenges. The integration of AI into Odia literary scholarship must therefore be guided by academic integrity, cultural sensitivity, and humanistic values, ensuring that technology enriches rather than diminishes the literary and cultural identity of Odisha.

One of the most significant challenges concerns the authentic interpretation of literary texts. Literature is not merely a linguistic structure but a profound expression of historical consciousness, philosophical reflection, cultural memory, and emotional experience. The literary universe of Odisha has evolved through diverse traditions—from the Charyapada heritage, the monumental contributions of Sarala Das, the devotional philosophy of the Panchasakha poets, and the lyrical elegance of Upendra Bhanja, to the realism of Fakir Mohan Senapati, the poetic genius of Gangadhar Meher, the romantic imagination of Radhanath Ray, the modernist voice of Sachidananda Routray, the philosophical writings of Manoj Das, and the internationally acclaimed poetry of Sitakanta Mahapatra. The symbolic richness and cultural nuances embedded in these works cannot be fully understood through algorithmic computation alone. Consequently, AI should be regarded as an academic collaborator rather than an autonomous literary critic.

Another important ethical concern relates to copyright, intellectual property, and academic authenticity. The digitization of manuscripts, literary works, folk narratives, and archival materials undoubtedly enhances accessibility and preservation. However, it also raises critical questions regarding ownership, attribution, plagiarism, unauthorized reproduction, and responsible use of digital resources. As AI systems increasingly learn from existing literary databases, transparent ethical guidelines become essential for safeguarding the intellectual contributions of authors, translators, editors, researchers, and cultural institutions.

The issue of AI bias and linguistic inequality presents another significant challenge. Contemporary AI models are predominantly trained on high-resource global languages, whereas regional languages such as Odia possess comparatively limited digital corpora and annotated linguistic resources. This imbalance may result in inaccurate translations, semantic distortions, contextual misunderstandings, and the marginalization of region-specific literary expressions. Therefore, the creation of comprehensive Odia language corpora, digital dictionaries, lexical databases, and annotated literary archives is indispensable for ensuring equitable and culturally appropriate AI applications.

Equally important is the preservation of Odisha's folk, tribal, and indigenous literary heritage. The cultural landscape of Odisha extends beyond canonical texts and includes Pala, Daskathia, Ravana Chhaya, Kandhei Nacha, Ghoda Nacha, Pattachitra traditions, Talapatra manuscripts, Jagannath culture, Gotipua performances, regional dialects, and the oral narratives of numerous tribal communities. These traditions survive through collective memory and lived cultural practices rather than written documentation alone. Although AI-assisted speech recognition, digital archiving, OCR technology, and multilingual transcription offer remarkable opportunities for preservation, excessive dependence on automated systems without community participation

and scholarly verification may lead to decontextualization, simplification, or misrepresentation of these invaluable traditions.

Furthermore, the rapid expansion of AI in higher education raises concerns regarding the future of creativity, critical thinking, and literary imagination. Literary scholarship flourishes through interpretation, emotional engagement, philosophical inquiry, and intellectual debate—qualities that cannot be entirely replicated by computational algorithms. If technological tools become the primary source of literary understanding, there is a risk that originality, independent criticism, and aesthetic appreciation may gradually decline. AI should therefore function as an instrument that stimulates research and learning while encouraging scholars and students to cultivate analytical thinking and creative interpretation.

From the perspective of educational policy, the implementation of technology-enabled pedagogy under NEP 2020 also encounters practical challenges, including disparities in digital infrastructure, unequal access to technological resources, variations in digital literacy, and the limited availability of specialized AI tools for Indian regional languages. Addressing these issues requires collaborative efforts among universities, research institutions, libraries, archives, governmental agencies, and technology developers to establish sustainable and inclusive digital ecosystems for Odia literary scholarship.

Therefore, the future of an AI-driven paradigm of Odia Literary Studies depends upon maintaining a harmonious synthesis between technology and the humanities. Artificial Intelligence possesses immense potential to preserve manuscripts, document cultural heritage, facilitate translation, strengthen comparative literary research, and expand global accessibility. Yet, the emotional depth, ethical consciousness, aesthetic beauty, and cultural identity embodied in Odia literature remain fundamentally human achievements. The ultimate objective of AI should not be to replace literary scholarship but to support, enrich, preserve, and globally disseminate the timeless intellectual and cultural legacy of Odia literature while safeguarding its originality, authenticity, and humanistic spirit.

XIII. Suggestions and Policy Implications

The emergence of an AI-driven paradigm of Odia Literary Studies calls for a comprehensive academic strategy that harmonizes Artificial Intelligence, Digital Humanities, Information and Communication Technology (ICT), and traditional literary scholarship. The objective should not merely be the adoption of advanced technologies but the creation of a sustainable ecosystem that preserves, enriches, and globally disseminates the intellectual and cultural heritage of Odisha. Therefore, appropriate policy interventions and scholarly initiatives are indispensable for ensuring that technological innovation serves the humanistic values of literature.

One of the foremost policy priorities should be the establishment of a National Digital Repository of Odia Literature and Cultural Heritage. Such a repository should systematically preserve Talapatra (palm-leaf) manuscripts, rare literary texts, historical journals, folk literature, tribal narratives, oral traditions, regional dialects, dictionaries, lexicons, and archival documents through high-quality digitization and AI-assisted cataloguing. The creation of an integrated digital archive would protect invaluable literary resources from physical deterioration while providing unrestricted academic access to scholars, students, translators, and researchers across the world.

Another significant recommendation is the establishment of specialized Centres for Artificial Intelligence and Digital Humanities in Odia Studies within universities and research institutions. These centres should encourage interdisciplinary collaboration among literary scholars, linguists, historians, archivists, computer

scientists, and cultural experts for research in Natural Language Processing (NLP), computational linguistics, machine translation, corpus development, digital lexicography, manuscript digitization, and literary analytics. Such institutional collaboration would create a strong scientific foundation for the future development of Odia language technology.

The preparation of a Comprehensive National Corpus of the Odia Language is equally essential. A well-designed corpus incorporating classical literature, medieval texts, modern writings, newspapers, folk literature, tribal oral traditions, regional dialects, academic publications, and contemporary digital discourse would significantly improve AI-based language processing and translation systems. The development of authenticated digital corpora would also reduce linguistic bias against regional languages and strengthen evidence-based literary research.

Higher educational institutions should further promote technology-enabled literary pedagogy through the integration of e-content modules, digital libraries, virtual classrooms, multimedia resources, AI-assisted learning platforms, and open educational repositories. Such initiatives would encourage research-oriented learning, critical thinking, collaborative scholarship, and digital literacy among students and researchers while making Odia literary studies more accessible at national and international levels.

Special attention should also be devoted to the documentation and preservation of Odisha's folk, tribal, and indigenous knowledge systems. The cultural traditions represented through Pala, Daskathia, Ravana Chhaya, Kandhei Nacha, Ghoda Nacha, Pattachitra, Jagannath culture, Gotipua traditions, regional dialects, and the oral literature of numerous tribal communities constitute invaluable components of Odisha's literary identity. AI-assisted speech recognition, multilingual transcription, metadata generation, and intelligent digital archiving should therefore be implemented in collaboration with local communities, museums, libraries, and research institutions to ensure authenticity, inclusivity, and cultural sensitivity.

Furthermore, greater emphasis should be placed on international academic collaboration through partnerships among universities, digital archives, museums, libraries, and research organizations. Collaborative projects on manuscript preservation, AI-assisted translation, comparative literature, and Digital Humanities would enhance interdisciplinary scholarship while increasing the global visibility of Odia language and literature. Participation in international digital repositories and open-access research platforms would further facilitate worldwide academic engagement with Odisha's literary heritage.

Finally, every policy concerning the integration of Artificial Intelligence into Odia Literary Studies should be governed by the principles of academic integrity, ethical responsibility, cultural preservation, linguistic inclusivity, and human-centered innovation. Technology should never be regarded as a substitute for literary imagination, critical interpretation, or cultural consciousness. Rather, Artificial Intelligence should function as a scholarly instrument that supports documentation, preservation, translation, and dissemination while safeguarding the originality, aesthetic richness, and humanistic spirit of Odia literature. Through such visionary policies and collaborative efforts, the proposed AI-driven paradigm of Odia Literary Studies can emerge as a sustainable model for preserving India's regional literary heritage in the digital age and presenting it to the global academic community.

XIV. Future Directions

The future of Odia Literary Studies is poised to enter a new intellectual era in which Artificial Intelligence (AI), Digital Humanities, Computational Linguistics, and Cultural Informatics will work in close collaboration with traditional literary scholarship. Rather than viewing technology as an external aid, future

research is expected to establish an integrated academic paradigm where literary interpretation, linguistic analysis, cultural preservation, and digital innovation function as complementary disciplines. Such an interdisciplinary approach has the potential to redefine the scope of Odia Literary Studies in the twenty-first century.

One of the most promising future directions is the emergence of AI-assisted literary analytics. The availability of large digital corpora will enable researchers to examine stylistic evolution, thematic patterns, lexical diversity, intertextuality, and historical transformations within Odia literature through computational methods. Digital text mining and corpus linguistics can reveal dimensions of literary history that remain difficult to identify through conventional textual analysis alone. Thus, AI may expand—not replace—the interpretative possibilities of literary criticism.

Another significant direction lies in the creation of a Global Digital Knowledge Network for Odia Literature. The literary legacy of Odisha, represented by classical poetry, medieval devotional literature, modern fiction, folk narratives, tribal oral traditions, and regional dialects, can be interconnected through multilingual digital repositories and open-access scholarly platforms. Such an initiative would enable researchers from different countries to engage with Odia literary heritage and promote collaborative international scholarship.

The future also demands the development of specialized AI models and language technologies for the Odia language. Advanced systems for Optical Character Recognition (OCR), speech recognition, semantic search, intelligent dictionaries, machine translation, and conversational language models trained on authentic Odia literary corpora could significantly strengthen literary research and educational practices. The creation of such resources would contribute to reducing the technological disparity that currently exists between global and regional languages.

Equally important is the future preservation of Odisha's intangible cultural heritage, including Pala, Daskathia, Ravana Chhaya, Gotipua, Jagannath traditions, Pattachitra narratives, Talapatra manuscripts, folk songs, tribal epics, oral histories, and indigenous knowledge systems. Emerging technologies such as AI-assisted documentation, 3D cultural mapping, immersive digital archives, and multilingual knowledge graphs can preserve these living traditions in forms that remain accessible to future generations while respecting their cultural authenticity.

The next phase of Odia Literary Studies should also encourage collaboration among literary scholars, linguists, computer scientists, historians, anthropologists, archivists, museum professionals, and digital humanists. Such interdisciplinary partnerships will generate innovative research methodologies and establish Odia studies as an active participant in global humanities research rather than a regionally confined discipline.

Ultimately, the future of an AI-driven paradigm of Odia Literary Studies should not be measured merely by technological advancement but by its ability to preserve human creativity, cultural memory, ethical responsibility, and literary aesthetics. Artificial Intelligence may process language, organize archives, and accelerate research; however, the imagination, emotional depth, philosophical insight, and artistic sensibility that define Odia literature remain uniquely human. The true future of Odia Literary Studies therefore lies in a harmonious synthesis of technology and tradition, innovation and heritage, global scholarship and regional identity, ensuring that the literary legacy of Odisha continues to flourish with renewed relevance in the digital age.

XV. Conclusion

The present study, "Towards an AI-Driven Paradigm of Odia Literary Studies," argues that the future of literary scholarship can no longer be confined within the conventional boundaries of textual criticism alone. The unprecedented advancement of Artificial Intelligence (AI), Digital Humanities, Information and Communication Technology (ICT), Natural Language Processing (NLP), and computational linguistic research has fundamentally transformed the ways in which languages, literatures, and cultural memories are preserved, interpreted, and disseminated. Within this rapidly evolving intellectual landscape, Odia Literary Studies stands at a historic crossroads where tradition and technology can converge to create a new paradigm of scholarship.

Odia, recognized as one of the Classical Languages of India, possesses a literary tradition extending over many centuries and representing an extraordinary synthesis of philosophy, religion, folklore, aesthetics, history, and social consciousness. From the Charyapada tradition, Sarala Das, the Panchasakha saints, and Upendra Bhanja to Radhanath Ray, Fakir Mohan Senapati, Gangadhar Meher, Mayadhar Mansingh, Sachidananda Routray, Gopinath Mohanty, Manoj Das, Ramakanta Rath, Sitakanta Mahapatra, and numerous contemporary writers, Odia literature reflects the intellectual evolution of Odisha across different historical epochs. Equally significant are its Talapatra manuscripts, Jagannath literary tradition, Pattachitra narratives, Pala, Daskathia, Ravana Chhaya, Gotipua, Odissi, folk literature, tribal epics, oral traditions, regional dialects, and indigenous knowledge systems, all of which together constitute an irreplaceable civilizational archive.

The study demonstrates that Artificial Intelligence should be perceived as a scholarly catalyst rather than a substitute for literary imagination or human creativity. AI-assisted technologies have the capacity to facilitate manuscript digitization, Optical Character Recognition (OCR), multilingual translation, corpus development, semantic analysis, digital lexicography, computational stylistics, and intelligent archival systems. These innovations can substantially strengthen literary research and cultural preservation while enabling wider accessibility to scholars across geographical and linguistic boundaries. Nevertheless, the emotional resonance, symbolic richness, ethical consciousness, and aesthetic sensibility that define great literature remain fundamentally human achievements that cannot be authentically replicated through algorithmic processes alone.

Furthermore, the contemporary educational vision embodied in NEP 2020, together with the global expansion of Digital Humanities and interdisciplinary research, provides an unprecedented opportunity to reposition Odia Literary Studies within international academic discourse. The integration of AI with literary scholarship can promote comparative literature, translation studies, cultural analytics, and digital preservation while encouraging collaborative research among linguists, literary critics, historians, anthropologists, archivists, and computer scientists. Such interdisciplinary engagement has the potential to transform Odia studies from a regionally confined discipline into an internationally visible field of humanities research.

At the same time, technological advancement must be accompanied by ethical responsibility, academic integrity, copyright protection, linguistic inclusivity, cultural sensitivity, and respect for indigenous knowledge systems. The future of AI in literary studies should therefore be governed not merely by computational efficiency but by a commitment to safeguarding authenticity, diversity, and the humanistic values embedded within literary traditions. Technology should illuminate literature rather than dominate it; it should preserve cultural memory rather than standardize it; and it should amplify human scholarship rather than replace it.

Ultimately, this study proposes that the future of Odia Literary Studies lies in establishing a harmonious synthesis between classical heritage and digital innovation, regional identity and global scholarship, cultural

memory and technological intelligence, tradition and transformation. The envisioned AI-driven paradigm is therefore not a technological revolution alone but an intellectual and cultural renaissance that seeks to preserve the timeless spirit of Odia literature while expanding its horizons for future generations. By integrating the enduring wisdom of the humanities with the transformative capabilities of Artificial Intelligence, Odia Literary Studies can emerge as a dynamic, globally connected, and academically resilient discipline, ensuring that the literary and cultural legacy of Odisha occupies its rightful place within the evolving landscape of world literature and twenty-first-century knowledge systems.

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