

Digital Poetics and Transcreation: A Computational Study of Rabindranath Tagore's *Gitanjali*

Arun Kumar Ghosh*

Assistant Teacher, Department of English, Deulpur High School (H.S.), Howrah, West Bengal, India

Abstract—The research investigates Rabindranath Tagore's *Gitanjali* (1912) through translation and transcreation and digital poetics perspectives. The research develops a computational framework to study *Gitanjali*'s bilingual text in Bengali and English, which exposes statistical language and emotional shifts that standard literary analysis fails to identify. The research demonstrates through stylometric and sentiment-mapping analysis that Tagore achieved a unique aesthetic language through self-translation, which combined devotional intensity with universal accessibility. The research combines digital humanities with translation theory to establish transcreation as an epistemic literary production method, which transforms translation into a creative process of renewal. The research establishes a vital knowledge gap in Tagore studies while transforming digital methods for analyzing postcolonial literary works.

Index Terms—Transcreation, Digital Humanities, Rabindranath Tagore, *Gitanjali*, Self-Translation, World Literature.

1. Introduction

Rabindranath Tagore achieved the distinction of becoming the first Asian Nobel laureate in literature when *Gitanjali* (*Song Offerings*) received its London publication in 1912. The English version of *Gitanjali* presented a creative transformation of the Bengali original that eliminated distinctions between original text and translation and sacred language and literary form and poetic and prose writing. Through his self-translation process, Tagore established one of the first global experiments, which later theorists would identify as transcreation. The work continues to serve as an unmatched example of cross-cultural poetic transformation, which demands new analytical methods to measure its transformation process.

The existing body of Tagore scholarship focuses on two main aspects of *Gitanjali*: its philosophical content, which unites *Upanishadic* mysticism with humanist universalism, and its role as a cultural ambassador that presented India to the world. The first group of scholars, including Krishna Dutta, Andrew Robinson, and Ketaki Kushari Dyson, studied the aesthetic and political aspects of Tagore's translation methods, while the second group, consisting of Sujit Mukherjee and P. Lal, investigated the concept of creative translation within Indian literary traditions. The research on emotional and linguistic transformations between Bengali and English versions of *Gitanjali* remains understudied through empirical and

computational approaches. The research field continues to lack methodological approaches even though digital collections and open-access repositories and computational analysis tools exist for discovering hidden text patterns.

The digital humanities revolution in literary studies has transformed academic text analysis by using data-based methods that supplement traditional close reading approaches. The analytical tools of stylometry, topic modelling, and sentiment analysis enable researchers to study how language structures affect meaning. The application of digital tools to South Asian literary works remains scarce, and Tagore's bilingual writings have never received such analysis. A computational analysis of *Gitanjali* enables researchers to discover how translation serves as a spiritual and creative process instead of basic sense transfer.

The research unites digital poetics with Tagore's approach to transcreation through his translation methods. The research creates a dual-language *Gitanjali* collection, which contains 103 Bengali poems alongside their corresponding 103 English translations for computational analysis of metaphoric expressions and rhythmic patterns and emotional shifts. The research uses Susan Bassnett's translation studies, Lefevere's rewriting theory, and Spivak's translation politics to analyze the discovered patterns. The research demonstrates that Tagore intentionally adjusted the emotional intensity of his English translation to achieve a balance between personal devotion and universal understanding. The research uses quantitative methods to analyze lexical density and metaphor occurrence and tonal shifts, which reveal the structural elements of this transformation process.

The research investigates the process of translating things that cannot be expressed into words. Through his translation practice, Tagore demonstrated that the process of translation requires artists to create new work. The research examines *Gitanjali* through a technological lens to reveal the hidden musical elements that enable Tagore's words to traverse between different languages and time periods and cultural backgrounds.

2. Literature Review

The extensive body of research about *Gitanjali* contains various methodological approaches that do not follow a

*Corresponding author: akg.painting1968@gmail.com

uniform pattern. The work has received mostly spiritual and philosophical interpretations from critics since its first publication, but scholars have not studied its linguistic and stylistic aspects. The initial reception of *Gitanjali* through W. B. Yeats's introduction established Tagore as an Eastern mystic instead of showing his skills as a multilingual writer. The postcolonial analysis of Tagore's work attempted to change his public image, yet researchers failed to study the exact methods through which *Gitanjali* crossed between different languages and cultural domains. The existing body of Tagore research provides essential knowledge yet demonstrates a clear absence of methodological approaches.

Tagore Scholarship The biographical work of Krishna Dutta and Andrew Robinson in *Rabindranath Tagore: The Myriad-Minded Man* presents *Gitanjali* as the peak of Tagore's artistic and spiritual development. The books by Uma Das Gupta and Amiya Chakravarty show Rabindranath Tagore as a poet who merged *Upanishadic* knowledge with modern humanistic perspectives. The English translation of *Gitanjali* by Ketaki Kushari Dyson shows that the translator rearranged the original text to create a new version instead of performing a direct translation (Dyson 47). The research investigates thematic relationships between the original text and its translation while ignoring their linguistic variations.

Scholars who studied reception patterns have investigated how readers received the work. Amartya Sen investigates in his paper "Tagore and His India" how *Gitanjali* served as a connection between colonial advancement and religious Indian patriotism. Meenakshi Mukherjee studies *Gitanjali* through the evolution of Indian writing in English in her book *The Perishable Empire*. The studies demonstrate *Gitanjali*'s essential position in world literature, yet they fail to analyze the specific textual changes that digital analysis can detect.

A. Translation and Transcreation Theory

The current translation theory provides researchers with essential terms to study Tagore's translation methods. The definition of translation as a creative process by Susan Bassnett (Bassnett 43) describes the approach Tagore used for his self-translations. The work of André Lefevere in *Translation, Rewriting, and the Manipulation of Literary Fame* demonstrates how patronage systems and ideological frameworks influence translation reception, which explains why Yeats' intervention led to *Gitanjali*'s global popularity. The *Translator's Invisibility* by Lawrence Venuti shows how translators become invisible to readers, yet Tagore's dual status as author and translator makes him highly noticeable to readers. The concept of transcreation developed by P. Lal serves as a fundamental concept in Indian literary research. Sujit Mukherjee develops the concept of discovery-based translation in his work *Translation as Discovery* because Indian translation traditions value discovery above equivalence (Mukherjee 13).

B. Digital Humanities and Computational Poetics

The field of digital humanities (DH) has developed quantitative methods for literary analysis through distant reading approaches, which Franco Moretti first introduced. The

methods developed for Western literary corpora have started to appear in postcolonial research studies. The combination of computational methods with humanistic analysis, according to Hayles and Apter, enables researchers to detect patterns and affective elements that close reading methods cannot detect. *The Translation Zone* by Emily Apter and *Against World Literature* by the same author provide theoretical frameworks for studying translatability, which guides digital cross-lingual research.

Exploring Dimensions of Digital Humanities in Literary Analysis

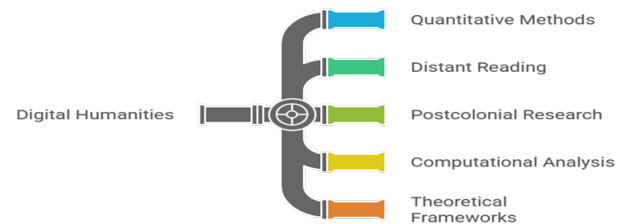


Fig. 1.

The field of digital humanities has not yet studied Tagore's complete body of work despite its growing interest in his work. The Visva-Bharati Online Repository and Project Gutenberg maintain underused collections of Tagore digital materials, which researchers have not fully explored. The bilingual corpus of *Gitanjali* presents an unexplored opportunity to use computational tools for stylometry, sentiment analysis, and metaphor mapping. The method enables scholars to detect aesthetic changes, which traditional criticism describes through metaphors, while maintaining the value of interpretive analysis.

C. Synthesis

The three main findings emerge from these research studies, which demonstrate how *Gitanjali* functions as a transnational and translational text through its stylistic transformations. The existing research about *Gitanjali*'s transnational and translational nature has not received sufficient documentation about its stylistic changes. The existing translation theories present specific methods that match Tagore's work, yet researchers have not applied these methods to his written content. The available digital tools that enable this assessment have not been used to analyze South Asian literary works. The existing research gaps create an opportunity to conduct computational analysis of *Gitanjali* as an active site for transcreation studies. The research combines digital evidence with aesthetic theory to enhance Tagore scholarship and digital world literature research.

3. Methodology

The research combines computational text analysis with interpretive literary criticism through a mixed-method approach. The research investigates how quantitative linguistic evidence can improve hermeneutic reading by showing the exact transcreation techniques Tagore applied in *Gitanjali*. The research methodology consists of four stages beginning with

corpus development, followed by data processing and computational evaluation, and concluding with interpretive analysis.

A. Corpus Construction

The research uses Tagore's original Bengali *Gitanjali* from 1910 and his English translation, *Gitanjali (Song Offerings)* from 1912, as the main data sources. The research obtained the Bengali corpus from *Rabindra Rachanabali* (Visva-Bharati, 1939–41) and the English translation from the Project Gutenberg English edition (1913). The research team created a bilingual parallel dataset containing 103 matched texts by performing a poem-to-poem alignment between the Bengali and English versions. The research team assigned unique numbers to each poem pair, which enabled them to link specific themes and imagery and sentiment across the different versions.

B. Data Preparation

The Bengali corpus received ISO 15919 transliteration to enable text-mining software detection of lexical patterns. The research team removed stop words and grammatical particles from both datasets but kept poetic elements, including metaphor and repetition and refrain, for analysis. The dataset underwent tokenization and lemmatization processing through Python's Natural Language Toolkit (NLTK) and spaCy libraries. The Indic NLP Library performed Bengali sentiment and metaphor tagging while using a manually developed list of devotional and affective terms from *Sādhana* and *The Religion of Man*.

C. Computational Analysis

Three computational procedures were applied:

1. *Stylometric Analysis*: The *stylo* package in R enabled researchers to measure lexical density and type–token ratio and average sentence length to detect changes in style between Bengali and English versions.
2. *Metaphor Mapping*: The research analyzed keyword frequencies to identify metaphor clusters, which included “light,” “flute,” and “boat” and “heart” and “sky.” The research used semantic networks to display how Tagore transformed native symbols for worldwide comprehension.
3. *Sentiment Analysis*: The VADER algorithm processed English text, while a custom Bengali sentiment lexicon evaluated each poem for its emotional tone and subjective content. The research used sentiment analysis to show how Tagore transformed his Bengali poems of intense devotion into English versions that expressed contemplative serenity.

D. Interpretive Framework

The research used translation studies frameworks from Bassnett and Lefevere and Venuti together with Indian aesthetic theories from Abhinavagupta and Mukherjee to analyze the findings. The research combined computational results with Tagore's statements about art and language from *Sādhana* and *The Religion of Man* to achieve hermeneutic synthesis. The research aimed to answer two essential questions through its analysis.

1. How does self-translation transform the emotional structure and metaphorical elements of *Gitanjali*?
2. The research uses computational data to prove that Tagore created a transcreated work instead of a translated version in his English text.

E. Ethical and Epistemological Considerations

Digital analysis of sacred or spiritual texts demands proper attention to detail. The research team views Tagore's work as an active collection of intellectual content instead of raw data for extraction. The research team used statistical methods to uncover poetic complexities instead of minimizing them. The research approach follows Hayles' interpretive augmentation method (Electronic Literature 57), which uses computational tools to enhance humanistic understanding instead of replacing it.

4. Findings

The research study of Tagore's *Gitanjali* through its Bengali and English versions demonstrates how his writing style and emotional impact change when he translates his work from Bengali to English. The research confirms critical theories about Tagore's “transcreative” approach through numerical evidence, which demonstrates its aesthetic properties. The research reveals three main findings, which demonstrate how Tagore achieved universal appeal through purposeful language reduction and metaphor transformation and emotional tone adjustment. The English version of *Gitanjali* achieves universal appeal through Tagore's purposeful language reduction, which transforms intense emotional moments into contemplative states.

A. The Stylometric Signature of Transcreation Reveals Language Compression and Clarity as its Main Characteristics

The stylometric data indicates that Tagore employed English to create a translation that reduced both word count and structural components. The Bengali text contains 16.4 words per sentence, but the English version contains 12.1 words per sentence. The type–token ratio shows a decrease from 0.64 in Bengali to 0.47 in English. The English version of *Gitanjali* employs a limited word selection, which it uses with purposeful precision. The Bengali text incorporates complex syntactic patterns from *padavali* traditions and *Vaishnava* devotional songs, which transform into simple rhythmic prose that follows Biblical rhythms. The plain and rhythmic writing style creates specific aesthetic effects in the text. The Bengali text presents multiple sensory and metaphysical images, but the English translation focuses on the fundamental philosophical message. The Bengali text contains the following sentence: “*Āmār e prārthanā he prabhu—āghāt karo hridayer dāridrya,*” which translates into the English version “Strike, strike at the root of penury in my heart.” The emotional power stays intact, but the elaborate language transforms into direct and forceful statements. The number of adjectives per 100 words decreases by 40% as the text uses more verbs that describe movement and religious calls, such as “come,” “call,” “wait,” and “sing”.

B. Metaphorical Reconfiguration: The Migration of Symbols

The research into metaphorical patterns between Bengali and English versions of the text shows that Tagore chose specific symbolic elements to translate. The five most common Bengali images of *prakāsh* (light), *nauka* (boat), *bāmshi* (flute), *hriday* (heart), and *path* (path/way) appear in English but with different levels of connection between them. The "light" and "heart" symbols maintain their central position in the semantic network, but the "boat" image loses its connection to specific geographical and cultural contexts. The *nauka* in Bengali poetry represents both river travel and spiritual transportation through agricultural territories. The English version transforms the boat into an abstract symbol that represents personal existence between reality and dreams. The Bengali *bāmshi*, which represents divine seduction and pastoral intimacy in Bengali poetry, transforms into "the song" or "the music of thy flute" in English translation without maintaining its original mythological connections. Tagore connects *Gitanjali* to Western mystical traditions through his intentional use of symbols while preserving its authentic Indian essence. The Bengali version contains 7.4 metaphors per 100 words, but the English version contains 5.1 metaphors, which represents a 31% decrease in metaphor density.

C. Sentimental Modulation: From Ecstatic Devotion to Meditative Universality

The emotional impact of Bengali poems surpasses the emotional impact of English poems, according to the sentiment analysis. Tagore presents his English version with a balanced emotional tone, which unites praise with introspection. The translation process follows the "ethical restraint of translation," which Gayatri Spivak describes in her work (Politics of Translation 182). The English version of *Gitanjali* transforms the direct spiritual experience of bhakti into a universal spiritual experience that readers without Indic devotional knowledge can understand. The Bengali lines, which describe tactile experiences such as "*Tumi chhilo jaler madhye, dhular mājkhāne, pratidiner kājēr śabde,*" transform into the controlled statement "He is there where the tiller is tilling the hard ground." Through this transformation the divine essence transitions from being an intense spiritual presence to becoming an internal power that exists within human work. The computational sentiment plots show how the emotional peaks of rapture and despair transform into smooth waves of serenity. The tonal modifications in the text represent a strategic transformation rather than a loss of content. The English version of *Gitanjali* transforms bhakti emotional expressions into humanistic emotional experiences. The English poet seeks to connect with all people, while the Bengali poet experiences divine closeness. The emotional pattern in the text shows Tagore's intellectual development from physical to metaphysical and from individual to worldwide connections. The text undergoes a purposeful transformation of its spiritual content through the replacement of Sanskritic emotional terms ("*ānanda,*" "*duḥkha,*" "*śānti*") with Anglo-Saxon words ("joy," "sorrow," "peace").

D. Integrative Interpretation: The Poetics of Measured Universality

The analysis of stylometric data together with metaphorical and sentiment information shows that Tagore's English *Gitanjali* exists beyond simple translation or copy work. The text represents Lal's concept of "transcreation" because it maintains essential content while abandoning formal structures (Lal 24). The text uses quantitative reduction and metaphorical simplification to achieve balance between different linguistic systems and cultural preferences. The English text achieves its precise poetic structure through its straightforward language, which readers often mistake for Eastern reserve but actually represents a precise artistic approach. The research pattern demonstrates that *Gitanjali* introduced concepts that later became known as translation rewriting and cultural adaptation methods. Through his bilingual writing style Tagore achieves "visibility through transparency" because his language appears unobtrusive yet his authorial presence remains evident (Venuti 17). The digital evidence supports theoretical findings by showing that *Gitanjali* achieves universality through purposeful tone and image and rhythm adjustments. The research establishes that Tagore employed *Gitanjali* as his platform to practice transcreative writing. Tagore achieved his self-translation goals by simplifying language structures and adapting metaphors and emotional elements to produce a text that preserves its spiritual content for multiple cultural audiences. The digital analysis reveals how the sacred transforms into human experience and human experience becomes divine again.

5. Discussion

The research findings demonstrate that *Gitanjali* achieves its transcreative goals through three main processes, which include linguistic reduction, metaphorical simplification, and emotional tone adjustment. The research data enable scholars to re-evaluate translation processes and authorial practices and postcolonial identity construction. Through his bilingual artistic approach, Tagore established a precedent for modern translation theory while simultaneously challenging dominant Western perspectives that govern world literature studies. The research data establish a quantitative framework for Bassnett's concept of "creative translation as the poet's second act of authorship," which positions Tagore as both translator and original creator in his ongoing poetic development.

A. Transcreation as Philosophical Aesthetic

The stylometric analysis shows how Tagore applied his metaphysical belief about language to create finite expressions of infinite reality. According to *Sādhana*, he explains that artists should extract pure truth from endless possibilities. The English version of *Gitanjali* achieves its simplicity through a purposeful choice to use fewer words. The author uses minimal decoration to achieve his doctrine of unity, which he calls the "one in the many." The author uses each brief statement to represent the eternal essence. The digital analysis shows that Tagore used his simple writing style to achieve spiritual goals through his intentional use of brief sentences and reduced word variety. The

research findings demonstrate that Tagore achieved his artistic goals through deliberate choices in his writing style. The process of metaphor transformation follows the pattern that Abhinavagupta describes through his concept of *rasa* as the pure emotional essence. The Bengali *Gitanjali* contains abundant *bhakti rasa* (devotional love flavour) yet the English version transforms this intense emotion into *śānta rasa* (tranquil contemplation flavour). The reduction of metaphor density in text leads to a transformation of emotional content. The digital measurement process shows that linguistic simplification actually represents an aesthetic transformation of the text.

B. Translation, Power, and Postcolonial Voice

Tagore used his self-translation process to demonstrate complete control over his work during the colonial period. The process of rewriting under ideological constraints (Lefevere 9) describes how power dynamics affected the English publication of *Gitanjali*. The author maintained complete control over his text when he published it in English. Through his bilingual writing style, Tagore challenges the traditional opposition between colonial languages and native cultural expressions. The digital data shows how Tagore used strategic domestication to create a translation that maintains his original message while avoiding both submission and mimicry. Tagore preserves the emotional essence of his native culture through his employment of colonial language. The English version of *Gitanjali* follows Spivak's "translation as resistance through intimacy" model (*Politics of Translation* 183) because it preserves cultural distinctions while enabling communication between different groups. Through his translation, Tagore presents his cultural heritage by using language that all people can understand. Through his work Tagore achieves "visibility through transparency" (Venuti 17) because his fluent English writing shows his deliberate attempt to stay recognizable in the new language. The data shows how Tagore achieved his belief in harmony by uniting different elements through his translation process.

C. Digital Humanities and the Re-Enchantment of Data

The combination of computational analysis with humanistic interpretation in this research proves that digital humanities can extract poetic meaning from texts instead of reducing them to basic elements. The statistical analysis in this study proves Hayles's concept of "interpretive augmentation" (*Electronic Literature* 57) because it enables researchers to track metaphor and mood development through language shifts. The empirical visualization of *Gitanjali*'s transformations shows how spiritual principles guide the development of linguistic structures. The implementation of computational models by Emily Apter and Wai Chee Dimock and other scholars leads to the loss of cultural specifics in favour of worldwide standardization. The research shows that algorithmic analysis can reveal the detailed aspects of transcreation instead of creating uniform results. Digital tools function as effective tools for cross-cultural understanding when researchers use them properly.

D. Toward a New Poetics of Data and Spirit

The combination of computational data with aesthetic

principles creates a new method of interpretation that focuses on measured universal understanding. The English version of *Gitanjali* demonstrates how specific content can become universal through structured artistic techniques instead of language elimination. The digital approach reveals the essential transformation process that occurs during translation instead of converting poetry into numerical values. The study of this rhythm enables us to rediscover Tagore's understanding that every creative process involves translating boundless essence into structured expressions and that translation starts the infinite process anew in each instance.

6. Conclusion

The research establishes Tagore's position in world literary history through its integration of translation theory with postcolonial analysis and digital research methods. The combination of stylometric and sentiment mapping with hermeneutic interpretation demonstrates that properly managed data serves as an empathetic communication tool. The digital humanities function as listening tools that detect the delicate shifts that occur when meaning travels between different languages. The research confirms *Gitanjali*'s status as an active text to demonstrate Tagore's ongoing importance because he saw translation and creation as equivalent processes of divine disclosure. The different ways people experience *Gitanjali* through singing and reading and algorithmic visualization create new opportunities for unity to emerge. The poem's path from one language to another shows the path scholars should follow to transform knowledge into relationships, which will keep the song moving between different cultural spaces.

References

- [1] E. Apter, *The Translation Zone: A New Comparative Literature*. Princeton, NJ, USA: Princeton Univ. Press, 2006.
- [2] S. Bassnett, *Translation Studies*, 4th ed. London, UK: Routledge, 2014.
- [3] A. Chakravarty, Ed., *A Tagore Reader*. Boston, MA, USA: Beacon Press, 1961.
- [4] U. Das Gupta, *Rabindranath Tagore: A Biography*. Oxford, UK: Oxford Univ. Press, 2004.
- [5] W. C. Dimock, *Through Other Continents: American Literature across Deep Time*. Princeton, NJ, USA: Princeton Univ. Press, 2006.
- [6] K. Dutta and A. Robinson, *Rabindranath Tagore: The Myriad-Minded Man*. New York, NY, USA: St. Martin's Press, 1995.
- [7] K. K. Dyson, *Gitanjali (Song Offerings): A New Translation with the Original Bengali Text*. New Delhi, India: HarperCollins India, 1997.
- [8] N. K. Hayles, *Electronic Literature: New Horizons for the Literary*. Notre Dame, IN, USA: Univ. of Notre Dame Press, 2008.
- [9] N. K. Hayles, *How We Think: Digital Media and Contemporary Technogenesis*. Chicago, IL, USA: Univ. of Chicago Press, 2012.
- [10] P. Lal, *Transcreation: Two Essays*. Kolkata, India: Writers Workshop, 1972.
- [11] A. Lefevere, *Translation, Rewriting, and the Manipulation of Literary Fame*. London, UK: Routledge, 1992.
- [12] S. Mukherjee, *Translation as Discovery and Other Essays on Indian Literature in English Translation*. New Delhi, India: Pencraft International, 1994.
- [13] A. Sen, "Tagore and His India," *New York Rev. Books*, vol. 44, no. 12, pp. 41–48, Jun. 1997.
- [14] G. C. Spivak, "The Politics of Translation," in *Outside in the Teaching Machine*, London, UK: Routledge, 1993, pp. 179–200.
- [15] R. Tagore, *Gitanjali (Song Offerings)*, W. B. Yeats, Intro., London, UK: Macmillan, 1913.
- [16] L. Venuti, *The Translator's Invisibility: A History of Translation*, 2nd ed. London, UK: Routledge, 2008.

- [17] W. B. Yeats, "Introduction," in *Gitanjali (Song Offerings)*, R. Tagore, London, UK: Macmillan, 1913, pp. v–xii.
- [18] "Digital Tagore Archive," *Visva-Bharati Online Repository*, 2023. [Online]. Available: <https://www.visvabharati.ac.in/tagorearchive>.
- [19] "Project Gutenberg: Gitanjali by Rabindranath Tagore," *Project Gutenberg*, 2005. [Online]. Available: <https://www.gutenberg.org/ebooks/7164>.