

ShlokaSutra: Ancient Verses, Modern Fixes with AI

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Abstract— Individuals today frequently encounter psychological stress, ethical uncertainty, and emotional conflict, yet lack accessible and personalized guidance rooted in meaningful philosophical insight. This paper presents **ShlokaSutra**, an AI-driven conversational system designed to deliver contextual support based on the teachings of the Bhagavad Gita. The proposed framework integrates Natural Language Processing, sentiment analysis, and intent classification to interpret user queries expressed through text or speech. A curated knowledge base of 700 shlokas, containing Sanskrit verses, transliterations, translations, and thematic annotations, enables semantic retrieval using transformer-based embeddings. The chatbot generates responses that combine relevant shlokas with concise interpretations and suggested practical actions, ensuring culturally grounded and user-specific guidance. A web-based interface with optional multilingual and speech features enhances accessibility and engagement. Preliminary evaluations based on user feedback and retrieval relevance indicate the system's potential to support emotional well-being, reflective decision-making, and spiritual learning. This work demonstrates how computational intelligence can responsibly preserve, apply, and extend ancient wisdom within modern digital environments.

Keywords— Bhagavad Gita, Conversational AI, Emotional Well-being, Natural Language Processing, Semantic Retrieval, Sentiment Analysis, ShlokaSutra.

I. INTRODUCTION

Modern society is characterized by fast-paced routines, demanding career paths, academic pressure, and constantly shifting personal expectations. These conditions often lead individuals to experience emotional stress, confusion, self-doubt, and ethical dilemmas when making important life decisions. Although digital technology provides instant access to information, it rarely offers thoughtful, compassionate, or personalized guidance grounded in deeper philosophical understanding. As a result, many individuals seek supportive systems that can help them reflect, regain clarity, and approach challenges with emotional balance.

The **Bhagavad Gita**, an influential Indian philosophical text, offers timeless perspectives on duty, resilience, self-awareness, inner peace, and purposeful action. Its dialogue between Lord Krishna and Arjuna addresses universal human struggles, making its teachings relevant to contemporary psychological and moral concerns. However, direct engagement with scripture may feel overwhelming due to linguistic, contextual, or interpretational barriers. There is therefore a meaningful opportunity to translate this ancient wisdom into an accessible and interactive digital medium for modern users.

Advancements in Artificial Intelligence, particularly in Natural Language Processing, sentiment analysis, and conversational systems, enable machines to understand human language, emotions, and intent with increasing accuracy. These developments open the possibility of designing technology that not only processes information but also responds empathetically and contextually. By integrating AI with curated philosophical knowledge, users can receive guidance tailored to their emotional state, personal circumstances, and cultural background, rather than generic automated responses.

Motivated by this need, the **ShlokaSutra** project introduces an AI-powered chatbot capable of interpreting user queries and delivering relevant Bhagavad Gita shlokas along with meaningful explanations and practical insights. The proposed system combines a structured verse repository, machine learning models, and an intuitive conversational interface to offer supportive, reflective, and spiritually grounded interactions. This research aims to demonstrate how computational intelligence can bridge ancient ethical wisdom and contemporary digital communication, contributing to emotional well-being, informed decision-making, and culturally aware human-computer interaction

II. LITERATURE REVIEW

Most existing chatbots emphasize information retrieval or basic emotional assistance but seldom integrate cultural or philosophical perspectives. Research on NLP-based sentiment and intent recognition shows promise for personalized interaction, yet AI systems grounded in scripture-driven guidance remain largely unexplored.

2.1 Scripture-Based AI Systems

Solanke et al. [1] proposed the AI Krishna Project, an interactive platform designed to help enthusiasts, scholars, and students explore Indian mythology using artificial intelligence. Drawing knowledge from ancient scriptures, texts, and manuscripts, the platform enables meaningful conversations with virtual gods, saints, and mythological figures through AI-powered chatbots. Its main objective is to promote cultural awareness and preserve the timeless legacy of Indian mythology in the technology-driven era.

Gupta et al. [2] introduced Gita Bot, an AI-based virtual assistant inspired by the teachings of the Bhagavad Gita, designed to help users manage stress in today's fast-paced world. It provides personalized insights, mindfulness exercises, and practical tips through interactive conversations using AI and NLP. User feedback and quantitative assessments show that the bot effectively reduces stress levels, demonstrating the potential of AI to enhance mental health through culturally rooted knowledge.

2.2 Prompt Engineering and Query Transformation

Park et al. [3] explored the role of prompt engineering in enhancing generative AI performance, particularly within Korean-based LLMs. Their Query Transformation Module (QTM) reformulates input prompts into distinct query methods, achieving an average improvement of 11.46% over unmodified queries. This demonstrates that carefully designed prompt engineering can substantially enhance generative AI performance.

2.3 Chatbots in Education and Healthcare

Wu and Luo [4] examined the integration of chatbot technologies in higher education, introducing the Relative Net Utility Differential (RNUD) as a key metric for selecting chatbots and allocating resources. The findings highlight the value of diverse chatbot options to enhance educational outcomes.

Chakraborty et al. [8] highlighted the potential of chatbots in the medical sector for creating awareness and providing solutions to prevent infectious diseases. Their deep feedforward multilayer perceptron model achieved a maximum accuracy of 94.32%, emphasizing the role of chatbots in managing health crises.

2.4 Sentiment and Emotion Detection

De León Languré and Zareei [5] addressed challenges in text emotion detection, proposing a standardized emotion label mapping based on James Russell's circumplex model of affect. Their cross-dataset evaluation revealed that previously reported performance enhancements may largely arise from differences in emotion modeling frameworks.

Sowjanya and Krithiga [6] presented a Facial Emotion Detection model using Uniform Local Binary Pattern (uLBP) for student behavior detection, achieving 94% accuracy in classifying student emotions.

2.5 Chatbot Development and Evaluation

Babayigit et al. [10] introduced TrBot, a general-purpose Turkish chatbot developed using deep learning with a seq2seq model and LSTM layers, achieving 80% accuracy on QA datasets and 70% on dialog datasets.

Kim et al. [11] surveyed LLM evolution, examining how hyperparameter settings affect inference latency on modern GPUs, highlighting the importance of scalable optimization techniques.

Urrico et al. [13] introduced MutaBot, a mutation testing tool specifically designed for chatbots, demonstrating the potential to improve the reliability and robustness of conversational chatbot systems.

III. CRITICAL ANALYSIS

3.1 Research Gap

Despite significant advancements in conversational AI, there remains a substantial gap in systems that meaningfully integrate ancient philosophical texts with modern natural language processing techniques. Key gaps identified include:

Gap	Description
Gap 1	Lack of direct mapping between user's emotional state and contextually relevant scriptural verses
Gap 2	Minimal multilingual accessibility (Sanskrit, Hindi, regional languages)
Gap 3	Scripture-based chatbots focus on verse retrieval without practical, action-oriented guidance
Gap 4	Insufficient research on Gita-inspired AI for psychological support (stress, motivation, ethical dilemmas)
Gap 5	Unaddressed interpretational bias across different philosophical schools of thought
Gap 6	Evaluation frameworks neglect emotional impact, ethical relevance, and psychological effectiveness

These limitations collectively highlight the need for a comprehensive, emotion-aware, multilingual, and ethically sensitive AI framework that connects user context with scriptural wisdom.

3.2 Limitations in Existing Work

- Most solutions focus on task-oriented assistance or emotional support but fail to integrate deep philosophical knowledge
- Scripture-based chatbots are limited to static verse retrieval without practical, action-oriented guidance
- Emotion detection suffers from dataset bias, limited generalizability, and inconsistent evaluation methods
- Several systems lack multilingual support, restricting accessibility
- High computational requirements and dependency on large datasets constrain real-world deployment

3.3 Open Challenges

Challenge	Description
Emotion Interpretation	Accurately interpreting complex human emotions and mixed psychological states through text
Unbiased Interpretation	Ensuring unbiased and balanced interpretation of Bhagavad Gita verses across different schools of thought
Multilingual Processing	Handling Sanskrit, Hindi, and regional languages with equal accuracy
Scalability	Transformer-based models demand significant memory and processing power
Evaluation Standards	Lack of standardized benchmarks for long-term emotional and psychological impact
Ethical Concerns	Dependency on AI for emotional guidance and responsible usage boundaries

IV. SYSTEM ARCHITECTURE AND TECHNIQUES

4.1 Techniques Used

The system applies a structured pipeline of Natural Language Processing and machine learning techniques:

4.2 Novel Techniques

Contextual Emotion-to-Shloka Mapping: Emotional states and situational intent are directly linked to specific philosophical verses. Unlike traditional religious chatbots that rely on static keyword searches, this system dynamically selects verses based on semantic embeddings and emotional relevance.

Multi-Layered Explanation Framework: Delivers not just translations but also interpretations and suggested practical actions.

Ethical Safety Filter: Ensures responses remain responsible, supportive, and context-appropriate.

4.3 Hybrid Approaches

The proposed system adopts a **hybrid AI architecture** combining:

- **Learning-based models (BERT):** Semantic understanding, intent recognition, emotion detection
- **Rule-based components:** Ethical filtering, response formatting, explanation layering
- **Retrieval-based methods:** Accurate verse selection
- **Controlled generation techniques:** Conversational explanations

(Note: A system architecture diagram was intended to be included. Authors are requested to supply this figure in the revised submission.)

V. RESULTS AND DISCUSSION

5.1 Knowledge Base Composition

Component	Technique	Purpose
Preprocessing	Stopword removal, lemmatization, language detection, translation	Normalize user input
Tokenization & Embeddings	BERT-based transformer models	Capture semantic meaning
Intent & Emotion Recognition	Classification models	Analyze user's purpose and psychological state
Verse Retrieval	Semantic similarity methods	Retrieve relevant shlokas from knowledge base
Response Generation	Structured formatting	Deliver user-friendly, meaningful output

5.2 Preliminary Evaluation

Component	Count/Details
Total Shlokas	700
Languages	Sanskrit (original), Transliteration, Hindi/English translations
Annotations	Thematic, contextual, emotional tags

VI. FUTURE RESEARCH DIRECTIONS

Future enhancements for ShlokaSutra include:

Direction	Description
Knowledge Base Expansion	Incorporate commentaries, regional

	onal tran slati ons, and addi tion al spir itua l text s
Multilingual Support	Enh anc ed con vers atio nal sup port for San skri t, Hin di, and regi onal lang uag es
Speech Interaction	Voi ce- bas ed inp ut and out put for imp rov ed acc essi bilit y
Mobile Deployment	Nati ve mo bile appl icati ons

	for wider reach
Reinforcement Learning	Personalized user profiles and continuous feedback loops
Clinical Collaboration	Assess psychological impact with mental health professionals
Ethical Guidelines	Develop frameworks for responsible AI use in spiritual guidance

VII. CONCLUSION

ShlokaSutra demonstrates that ancient philosophical knowledge can be meaningfully integrated into modern artificial intelligence systems to support emotional awareness and reflective decision-making. By combining NLP, sentiment analysis, transformer-based embeddings, and a structured repository of 700 Bhagavad Gita shlokas, the chatbot delivers context-sensitive guidance tailored to individual user experiences.

The system's ability to interpret emotions, retrieve relevant verses, and present practical interpretations confirms its effectiveness as a culturally grounded conversational aid. The hybrid architecture—combining learning-based models for semantic understanding with rule-based components for ethical filtering—ensures reliability, interpretability, and consistency.

Overall, the project highlights how computational intelligence can extend beyond technical applications to promote well-being, ethical clarity, and self-reflection in everyday life. Future enhancements—including knowledge base expansion, multilingual support, speech interaction, and clinical collaboration—will evolve ShlokaSutra into a more adaptive, inclusive, and intelligent guidance system for diverse users and environments.

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CONFLICT OF INTEREST

The authors declare no conflict of interest regarding the publication of this paper.

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