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EMPOWERING YOUTH: LEARNING AND CONSCIOUSNESS ENHANCEMENT VIA AI-DRIVEN BHAGAVAD GITA CHATBOTS

Parth Vimalbhai Nakrani[1], Amit Joshi[2]
[1]ISMA University, Valērijas Seiles iela 1-korpuss 6, Rīga, LV-1019
[2]ISMA University,Valērijas Seiles iela 1-korpuss 6, Rīga, LV-1019
e-mail: pnakarani09@gmail.com , amit.joshi00008@gmail.com
www.isma.lv

Abstract

The young generation is facing many challenges like peer pressure, depression, bad social behaviour, and addiction to drugs and electronic devices. Unfortunately, the current education system and parents failed to teach these students how to deal with their life's problems. To overcome these problems, a virtual AI-based chatbot system called "GyanVani" has been developed to address lifestyle-related queries. The chatbot uses machine learning algorithms and ensemble learning including polling methods, as well as a Python programming model, to identify student questions and answer them based on the Bhagavad Gita. This innovative approach aims to provide guidance and support to youth.

Key words: *Youth, Chatbot, Artificial intelligence, Bhagavad Gita, Guidance.*

1. Introduction

A student's growth is highly correlated with his or her ability to deal with the academic and social aspects respectively. Lots of students become alcohol abusers, smokers, and bad eaters, too, which may be dangerous for their future health. Physical health can also cause psychological problems to grow more strongly in youth, like anxiety, depression, and even suicide. The existing education system and parents are missing in teaching young people how to achieve life purpose.

The study offered a solution to the apparent problems by employing the teaching and principles of Bhagavad Gita as the basis of the design of GyanVani, a chatbot that will help students overcome issues related to social complexities. This study is unique and offers a practical approach to help students better manage their lifestyles. It helps the students attain the knowledge of the Bhagavad Gita and employ them successfully in various

life problems. Also, it contains important life lessons in the areas of education, addiction, personality, relationships, and spirituality. The proposed chatbot will use machine learning algorithms to monitor student inquiries and act as a virtual life coach, spiritual guide, mentor, loyal friend, and expert mentor.

2. Background and Context

The research project is aimed at developing an expert chatbot system. Chatbot's foundations, variations, and uses sections will be discussed. Also, this study will consider the relevance of the Bhagavad Gita to education and its social implications. For holistic education, the Bhagavad Gita encourages real knowledge, personality development, and societal harmony. Its teachings provide valuable advice to students like building determination, controlling emotions, and developing positive traits among others. Furthermore, it involves several life skills that include decision-making, time management as well as stress management. Thus, the Gita can be seen as a complete guide for personal development in the modern-day world with its challenges which ought to be passed through cautiously.

3. Literature Review

The literature review begins with an overview of NLP (Natural Language Processing), chatbot technology, multiclass classification, and ensemble learning techniques. NLP is at the heart of chatbot creation, enabling humans and computers to speak to each other and perform various other language-processing tasks. It develops machine capabilities to perceive and analyse text, voice, and sentiment, thereby improving communication. Researchers look at many issues and advancements in chatbots and NLP, tackling student lifestyle problems and using multiclass classification and ensemble learning approaches. In this review, the purpose is to review the existing studies and ideas in these areas to contribute to the creation of an effective chatbot system.

4. Research Methodology

Our research uses a problem-based, applied research approach with a qualitative approach. Our goal is to develop practical solutions (chatbots) to solve the challenges (problems) faced by the younger generation. For data collection, we collected students' lifestyle issues and questionnaires through an online survey. A supervised machine learning approach using a transformer-encoder-decoder model is used to train chatbots, an approach that includes Python programming for sentence encoding and the TensorFlow

library that includes natural language processing (NLP) components, including stemming techniques for word normalisation, term-document matrices (TDM), and word embedding for semantic representation. Software development tools include Python IDE, Jupyter Notebook, web development tools (HTML, CSS, JavaScript) for chatbot interface, Android Studio for mobile app development possibilities and capabilities, and Google Cloud Platform for potential cloud deployment.

5. Implementation and Features of GyanVani Chatbot

The Chatbot GyanVani is an innovative technology, developed to disrupt students' engagement with human support and to ensure comprehensive impact. The chatbot's architecture covers a range of modules and functions that are aimed at the optimization of user experience and resourceful answers at the right time.

Development and Features:

1. Fundamental Model Development: The structure of the fundamental model is designed in the hopes that the chatbot will be able to provide students with satisfactory responses.

2. Ensemble Classifiers for Lifestyle Queries: The chatbot employs the ensemble classifiers to solve the probable query of students' lifestyles.

3. Knowledge Base Integration: User inquiries are handled via a knowledge base and do not return erroneous answers to the given requests.

4. Student-Friendly Interface: The front-end interfaces exhibit a chat-like Q/A interface powered with robust text-to-text chatbot technology which results in a smooth interface with the students.

5. Multi-Platform Accessibility: The chatbot is accessible on Android as well as website progress, factoring in the different preferences of the users.

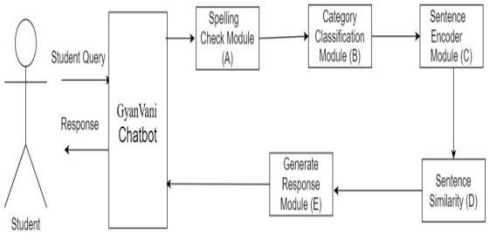

Figure 1. Block diagram of the proposed model

GyanVani's architecture is designed to facilitate efficient query processing and response generation through a series of well-defined modules: GyanVani's architecture is designed to facilitate efficient query processing and response generation through a series of well-defined modules:

1. Query Processing Modules:

– Spelling Check (Module A): Performs a correct spelling of the error, avoiding wrong query interpretation.

– Category Classification (Module B): For efficiency, recognize the type of question by telling processing.

2. Semantic Analysis:

– Sentence Encoder (Module C): Analyzer provides the ability to find out the meaning of words that are usually relatable to a query.

– Sentence Similarity Algorithm (Module D): Performs the match of the query against the set of responses taken from the knowledge base.

3. Response Generation (Module E): Creates logical responses compounded upon the observed query. Worldwide, the trade of goods and services contributes significantly to global economic growth and development. International trade enables specialisation, with nations focusing on their comparative advantages and trading with others for goods and services they do not produce as efficiently. This, in turn, leads to increased productivity and higher standards of living. Trade also facilitates the transfer of technology and know-how between countries.

Website Version: Supported by Flask on Google Cloud, the website version will let users type in their queries, which go through the processing of machine learning algorithms and act as a result generator further.

Android Version: The app encourages users to type in their questions. These are processed with NL Processing and ML techniques to deliver results on the screen as categories.

GyanVani seeks to radically assemble the student support system when introducing its easy-to-use and personalised chatbot platform.

6. Evaluation and Results

The evaluation of the GyanVani chatbot involved a thorough examination of various computational methodologies, utilising a knowledge base that incorporated student lifestyle queries and insights from Bhagavad Gita teachings. The study employed a diverse set of natural language processing techniques, machine learning algorithms, and methods, with the chatbot's core model being developed in Python. The primary goal of the research was to create a practical tool for students to access virtual

counselling and seek guidance on lifestyle concerns. To cater to different user preferences, two versions of the chatbot were developed – a website version and an Android application. The assessment covers numerous parameters such as data collected from structured questionnaires both online form and improves performance reports Query Category Classification Module which utilises multiple algorithms like Naïve Bayes, Decision Tree, K-Nearest Neighbors, and so forth. The customer satisfaction surveys as well as the GyanVani chatbot's ranking were also taken into consideration. Feedback and reports generated in the course of the implementation of the chatbot produce highly useful information about the efficiency and acceptability of the chatbot in resolving students' issues and increasing their satisfaction.

7. Conclusions

The GyanVani chatbot, an idea that analogizes the Bhagavad Gita, helps young people cope with personal problems. Identified challenges include coursework anxiety and social media addiction. GyanVani, a virtual counsellor using machine learning algorithms guided by the teachings of the Gita, is available. Recommendations highlight the chatbot's potential to shape students' beliefs and character positively. Plans involve expanding its capabilities to include voice commands and broader accessibility. Regardless of language constraints, the demonstration of a machine learning-based system that aids students in multiple facets related to lifestyle is the outcome of the study.

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Authors

Parth Vimalbhai Nakrani, 27th September 2000, INDIA

Current position: Student
University studies: ISMA University
Scientific interest: iOT and AI ML
Publications (number or main): main
pnakarani09@gmail.com

Amit Joshi, 18th July 1987, INDIA

Current position, grades: Lecturer at ISMA University
University studies: BA School of business and Finance
Scientific interest: Artificial intelligence and machine learning, iOT
Publications (number or main): 6th
Experience: 12 + years