**LITERATURE SURVEY**

**TITLE:** "Web-based chatbot for frequently asked queries (FAQ) in hospitals"

**ABSTRACT:** Objectives Local hospitals are operated by the resigned association of patients as passive communication channels. The online hospital data related to the users’ queries are not transparent and reliable. Therefore, it is crucial to have an intelligent web chatbot that manages user requests and provides quick access to local hospital information. In this paper, we present a framework and functionality of a chatbot developed using web technologies. Methods The bot engine was integrated by several machine learning approaches like gradient descent (GD) and natural language processing (NLP) algorithms. The trained data entered into the bot were split into mini-word batches, and the GD algorithm was applied sequentially on each mini-batch. The NLP methods involved in converting a word to its stem with a text result less readable by humans. Results The employed ML algorithms were successfully incorporated to manage the alternative synchronisation of text and voice messages. Conclusions The proposed bot can be a better solution for data extraction from local hospitals. It is an insightful communication channel for both users and hospital staff.

**TITLE:** "Chatbot for disease prediction and treatment recommendation using machine learning"

**ABSTRACT:** Hospitals are the most widely used means by which a sick person gets medical check-ups, disease diagnosis and treatment recommendation. This has been a practice by almost all the people over the world. People consider it as the most reliable means to check their health status. The proposed system is to create an alternative to this conventional method of visiting a hospital and making an appointment with a doctor to get diagnosis. This research intends to apply the concepts of natural language processing and machine learning to create a chatbot application. People can interact with the chatbot just like they do with another human and through a series of queries, chatbot will identify the symptoms of the user and thereby, predicts the disease and recommends treatment. This system can be of great use to people in conducting daily check-ups, makes people aware of their health status and encourages people to make proper measures to remain healthy. According to this research, such a system is not widely used and people are less aware of it. Executing this proposed framework can help people avoid the time-consuming method of visiting hospitals by using this free of cost application, wherever they are.

**TITLE:** "Chatbot for healthcare system using artificial intelligence",

**ABSTRACT:** Healthcare is very important to lead a good life. However, it is very difficult to obtain the consultation with the doctor for every health problem. The idea is to create a medical chatbot using Artificial Intelligence that can diagnose the disease and provide basic details about the disease before consulting a doctor. This will help to reduce healthcare costs and improve accessibility to medical knowledge through medical chatbot. The chatbots are computer programs that use natural language to interact with users. The chatbot stores the data in the database to identify the sentence keywords and to make a query decision and answer the question. Ranking and sentence similarity calculation is performed using n-gram, TFIDF and cosine similarity. The score will be obtained for each sentence from the given input sentence and more similar sentences will be obtained for the query given. The third party, the expert program, handles the question presented to the bot that is not understood or is not present in the database.

**TITLE:** Development of artificial intelligence based chatbot using deep neural network",

**ABSTRACT:** No matter how well-known colleges are, there will always be concerns that people have during the application process and even after they have been accepted. The college hosts a variety of events, ranging from departmental activities to club activities. Not everyone is likely aware of all events. Chatbot bridges gap between people and information. The world is becoming more automated, and people expect services to become more automated as well. A chatbot is software that responds to user questions and provides information from a knowledge base. The purpose of this project is to create a chatbot for VNRVJIET that will answer queries raised about fests, departmental activities, events, clubs, infrastructure, placement data, admission procedure, and others. The proposed methodology consists of a chatbot built using Deep Neural Networks and speech recognition capabilities. The information is delivered in both speech and text modes using the proposed methodology. Data is collected and formatted in JSON format initially. The prepared data is preprocessed and then the bag of words algorithm is applied to it. The bag of words algorithm is most influential method for object categorization. The key aspect of using this algorithm is for converting the word vector to a numerical data set for machine to do a deeper analysis. A deep neural network is created using tensor flow API, and the speech recognition function is defined for the input query and output response. Finally, chatbot function is defined and utilized for generating responses for any given query

**TITLE:** “ELIZA- A computer program for the study of natural language communication between man and machine”,

**ABSTRACT: ELIZA** is an early [natural language processing](https://en.wikipedia.org/wiki/Natural_language_processing) [computer program](https://en.wikipedia.org/wiki/Computer_program) created from 1964 to 1967[[1]](https://en.wikipedia.org/wiki/ELIZA#cite_note-turing-1) at [MIT](https://en.wikipedia.org/wiki/MIT) by [Joseph Weizenbaum](https://en.wikipedia.org/wiki/Joseph_Weizenbaum).[[2]](https://en.wikipedia.org/wiki/ELIZA#cite_note-:8-2)[[3]](https://en.wikipedia.org/wiki/ELIZA#cite_note-:0-3) Created to explore communication between humans and machines, ELIZA simulated conversation by using a [pattern matching](https://en.wikipedia.org/wiki/Pattern_matching) and substitution [methodology](https://en.wikipedia.org/wiki/Methodology) that gave users an illusion of [understanding](https://en.wikipedia.org/wiki/Natural-language_understanding) on the part of the program, but had no representation that could be considered really understanding what was being said by either party.[[4]](https://en.wikipedia.org/wiki/ELIZA#cite_note-:2-4)[[5]](https://en.wikipedia.org/wiki/ELIZA#cite_note-:6-5)[[6]](https://en.wikipedia.org/wiki/ELIZA#cite_note-Baranovska-6) Whereas the ELIZA program itself was written (originally)[[7]](https://en.wikipedia.org/wiki/ELIZA#cite_note-7) in [MAD-SLIP](https://en.wikipedia.org/wiki/SLIP_(programming_language)), the pattern matching directives that contained most of its language capability were provided in separate "scripts", represented in a [lisp-like representation](https://en.wikipedia.org/wiki/S-expression). The most famous script, DOCTOR, simulated a [psychotherapist of the Rogerian school](https://en.wikipedia.org/wiki/Rogerian_psychotherapy) (in which the therapist often reflects back the patient's words to the patient),[[8]](https://en.wikipedia.org/wiki/ELIZA#cite_note-:9-8)[[9]](https://en.wikipedia.org/wiki/ELIZA#cite_note-rogers-9)[[10]](https://en.wikipedia.org/wiki/ELIZA#cite_note-The_Samantha_Test-10) and used rules, dictated in the script, to respond with non-directional questions to user inputs. As such, ELIZA was one of the first [chatterbots](https://en.wikipedia.org/wiki/Chatterbot) ("chatbot" modernly) and one of the first programs capable of attempting the [Turing test](https://en.wikipedia.org/wiki/Turing_test)