

# Survey Paper on AI Chatbot on Intelligent Nutritionist

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**Abstract** - People each around the world is getting increasingly concerned with their health and way of life in moment's ultramodern terrain of the moment. Still, simply avoiding junk food and exercising isn't enough, not sufficient; we need a well-balanced diet. We can live a healthy life with a balanced diet grounded on our height, weight, and age. Your diet can help you achieve and maintain a healthy weight, lower your chance of developing chronic conditions (including cancer and heart complaints), and ameliorate your general health when combined with physical exertion. For this, there is a need for a smart AI chatbot that can be a personal chatbot for suggesting diet and exercise and calculating BMI.

**Keywords:** Chatbot, Smart nutritionist, BMI Calculator, Bot, Machine Learning.

## 1. Introduction

The thing of food recommendation is to give consumers a list of ranked food products that will satisfy their unique salutary requirements. Then, the term " food" has a broader meaning and refers to all food- related products, including reflections, fashions, coffee shops, and dining establishments. Exploration on nutrition, food wisdom, psychology, biology, anthropology, sociology, and other natural and social disciplines is frequently multidisciplinary in nature.

There are primarily three factors that make food recommendations different from other feathers of recommendations. Food recommendations bear a variety of environment and subject- matter moxie. Rich stoner environment( similar as heart rate and number of way taken) and external environmental environment( similar as physical exertion-applicable and health-applicable environment) collected from colorful detectors describe druggies' factual physical conditions and their surroundings, and as a result, give useful information for precise matching between stoner demand and food particulars.

For instance, a food recommendation after exercise that uses sensors is likely to suggest to one person foods high in protein and water. Additionally, eating advice is crucial for good health. Therefore, for constraint optimization and computing, the food recommender system should also include medical information, nutritional knowledge, and other pertinent domain knowledge. (2) The most notable distinction

from the user's perspective is that dietary recommendations are highly relevant to users' health. As a result, the ideal meal recommendation system should self- adaptively create a trade-off between individual dietary preferences or interests and nutritional needs.

## Integration of context and knowledge

The ability to filter out unrelated recommendations can be aided by basic context information (like time and location). Compared Food recommendations involve more complex, varied, and even dynamic factors than other types of recommendations do. Rich user context and external environmental context information provide crucial information for an exact match between user requirements and food items of interest by describing users' actual physical conditions and their surroundings. Numerous wearable electronic devices and ambient sensors have been developed over the past ten years. By connecting users to nearby machines, they can instantly monitor changes in the environment and conditions of people's bodies everywhere.

## 2. Related Work

Many medical Chatbot prototypes have been released in recent years with the intention of guiding the user with medical advice after extracting the illness details from user messages. This research describes a system and approach for virtual discussion that can help adolescents deal with their psychological stress. With the help of this chatbot, users will be able to ask inquiries like they would to a real person. Natural Language Processing ("NLP") is the technology at the heart of the proposed chatbot. [1]

This essay offers an analysis of the types of many recommender systems recommendations that focus mostly on divided into three groups: cooperative content- based filtering, filtering, and hybrid filtering. This essay also covers benefits and drawbacks of recommendation techniques. Each technique has advantages and disadvantages that are relevant to the field.

This article suggests a method for developing a chat application with knowledge that forbids users from sending improper or unsuitable messages to other users by implementing natural language processing at the lowest level possible (NLP). [3]

The conversational flow, difficult tasks, implementation of NLU, and other characteristics of this framework have all been successfully discussed and illustrated by the authors. [4]

The open-source Python libraries Rasa NLU and Rasa Core, which are used to create conversational software, have been successfully explained by the authors in this work. [5]

According to the study, artificial intelligence (AI) and natural language processing are being used to create chatbots, which are intelligent systems (NLP) formulas. It provides solutions to questions about the examination cell, admission, academics, and users' attendance, gpa, placement cell, and other extracurricular activities.[6]

It claims that items are recommended to users through content-based recommendation systems based on the item's description and the user's interest profile. Although a user's profile can be entered, it is frequently determined from the feedback a user provides on things [7].

This paper describes a technique for virtual conversations and a system for adolescents' psychological stress relief. Using a chatbot, a user can ask simple inquiries in the same they would speak to a person. The equipment at the suggested chatbot's primary component is NLP. ("NLP"). This essay's writers are Dr. Dipti Patil, Deesha Gavand, Pooja Mehta, and Surekha Iyer. The purpose of Using input from users, this chatbot will create a BMI calculator. Intimate information about the user. The bot determines the user's BMI calculates the necessary diet plan. The approach employed is RASA. System for recommending health care.

The diabetic population is the system's primary focus. To produce food for the users, the ACO (Ant Colony Optimization) algorithm is used. It is a population-based, constructive approach that draws on ant social behavior. It is used to train the model using values and a variety of parameters.

This paper offers a method for creating intelligent chat programmes that prevent users from sending inappropriate or inappropriate messages to participants by embracing the bottom-up implementation of natural language processing (NLP). The paper was written by N.Naveenkumar et al.

In another study, users must register before they can start a chatbot interaction. An expert system is utilised to respond to the questions if the chatbot is not aware of the solutions. Pattern Template data is kept in databases as data. When a user submits text-based input, the chatbot will pre-process it by incorporating tokenization, feature extraction, and the deletion of stop words. All words are tokenized during this process, and stop words are also removed.

### 3. Conclusions

One of the most well-known adages in the English language is "Health is Wealth." One's health has a big impact on their life. The kind of food one eats affects how well they stay in shape. Nowadays, kids don't give their health any thought and eat a variety of junk food. In the latter portion of their lives, this will cause a lot of problems. The suggested system aims to provide an effective diet for an individual based on various factors like height, weight, and the preferred type of food. The system also places a strong emphasis on offering people with diabetes a suitable diet. The system requests a number of personal information from the user or patient, including blood sugar level, and provides a number of diet plans as well as any necessary medical dosage. The user can get the optimal diet chart provided by the system, which also has tools to keep the user on track. The potential to reach a wide range of people through the usage of chatbots in the field of health promotion is significant. The user can access information regarding his or her actual diet using this system. The time and expense for professional dietary guidance are reduced by this programme. The benefits of this method for dieticians and health care providers are tremendous. A chatbot that recommends a diet can help a user eat well and enhance their health, all from the comfort of their home. It is a reasonably priced app that offers quick responses to user inquiries. A chatbot is used to deliver all of the aforementioned functions. A chatbot is a fantastic tool for human-machine communication. The application is designed to get a quick response from the bot, which aids in giving the user the right answer.

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