

## AI ChatBot for VTU

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**Abstract** - Chatbots are applications that simulate human chat with artificial intelligence (AI). It is intended to be the ultimate virtual assistant, serving as a source of entertainment while assisting users with duties ranging from answering inquiries to providing driving directions. Converting the thermostat into a smart home, playing one's favorite songs, etc. Chatbot is becoming more common in companies because it can minimize customer service costs and accommodate many users simultaneously. Chatbots, on the other hand, must be as efficient as possible when performing certain tasks. In order to resolve this problem, this report provides a chatbot interface that provides an effective and reliable response to any question based on a FAQ dataset using the JavaScript json and a dedicated backend. Template based and general questions such as welcome/greetings and general questions will be answered using json and other service-based questions. Backend is used to offer responses at any moment in order to satisfy customers. Any university may use this chatbot to address questions to interested students in an immersive way.

**Key Words:** Artificial Intelligence, VTU, Chatbot, React

### 1. INTRODUCTION

Today, web-based applications like E-commerce, Entertainment, Virtual assistance and many more are available. The field of online service is rising dramatically, with all aspects being connected to the Web. The use of everything at the doorstep is very user friendly. Customer assistance is available in a variety of formats, including live chat help and mobile services. However, it takes time to address consumer requests about all other support services rendered by humans. The number of customers also raises the waiting time, contributing to low satisfaction of customers. Chatbots are essentially looking for keywords, expressions, and instances, but some use more sophisticated techniques. No chatbot has yet had the opportunity to trick people totally into trusting them with its daily dialect information. This report highlights the need for chatbots in the education domain and seeks to accommodate the visitors. This report proposes some preliminary results of our work on the architecture and execution of JavaScript, a chatbot aimed at supporting students through knowledge and resources in their campus life. Our analysis focuses on identifying the type of information and resources best accessible by such a touch point, how the personality of the

chatbot impacts the user's interactions, and the level of intelligence that can be introduced. After evaluating the state of the art of the application in the field, we assess the demands of users and their readiness to use a chatbot for this specific purpose. A chatbot was developed to learn the needs of the user and the behaviour of the user

### 1.1 ChatBot Basics

Chatbot is an artificially intelligent organism that can talk to people. This may be text-based, or a talk (in case of voice-based queries). Basically, chat bots are used for acquiring information. It can be operated on local PCs and mobile phones, although it is accessible most of the time over the Internet. It may be convincing, fascinating and orthodox. It is an interaction agent with users of a certain domain or subject with input in natural language phrases. Mostly a chatbot operates by a user who asks a question or starts a new subject.

### 2. LITERATURE SURVEY

[1] Chatbot for University Related FAQs (2017)

User enquiries are first checked by the AIML check piece to see if they are AIML scripts or not. AIML is distinguished by generic questions and greetings, which are answered using AIML forms. Chatbots are built using Artificial Intelligence Markup Language (AIML) and Latent Semantic Analysis (LSA).. Pattern based answer is presented to the user to answer their query

[2] Automated Facilitation for Idea Platforms: Design and Evaluation of a Chatbot Prototype (2018).

Interpretation as facilitators for chatbots. It also gives information on how to obtain the criteria and shortcomings of the non-human assistance and the degree of approval by people from studies to develop chatbots. Research project in design science. The ability of chatbot to detect intent and interact with the user about its utterances content is limited because of the low amount of training knowledge available.

[3] A Literature Review On Chatbots In the Healthcare Domain (2019)

Provides a critical review of the tasks involved in NLU and ML for inclusion of them in chatbot systems to make them smart. This paper covers the review of 24 research papers. This indicates that a lot more research paper can be published in

this research area in future. Also, the data format plays a vital role for the selection of an algorithm

[4] An Overview of Machine Learning in Chatbots (2020)

Outlines many machine learning techniques which could improve the performance of chatbots. AI technology to interact with a human more intelligently. Implement enhanced computing methods for natural language to correctly understand user input information.

[5] Chatbot Development Using Python (2020)

The Chatbot is trained on Rule-based Approach, A Rule based system is used to store and manipulate knowledge to interpret information in a useful way. Works on Pattern Matching and Natural Language Understanding (NLU) classification methods. Answers the queries only by the data which is available in the system.

[6] A Multimodal LowCode Chatbot Development Framework (2020).

A unique model-based chatbot development framework that uses Model Driven Engineering (MDE) approaches to answer this challenge. It's simple to add more platform-specific actions and events to the mix. Alexa or Trello are two examples. Any complex chatbot response requires manual coding and API management, making them unfit for nonprofessional developers.

### 3. PROBLEM STATEMENT

#### Existing System

1. Question Answering (QA) systems may be defined as data access systems that aim to respond to natural language inquiries by offering answers rather than by simply listing document links.
2. Chatbots cannot address multiple problems simultaneously and therefore conversation possibilities are limited.
3. Students must visit the university manually to get answers from the college support office for their questions. This method needs a significant amount of time and money to attend a university if its miles away home.
4. In certain corporate areas, chatbots are used where people can be replaced. These systems are based on the interaction of ELIZA or ALICE.

#### Proposed System

1. Framework focused on Semantic upgrades and the implementation of a domain-based application based on a pattern-matching chatbot.
2. To make assistance easier for visitors by utilizing an interactional bot that does not require human participation.
3. Using a university chatbot as an excellent helper for any visitor who is always bombarded with the same inquiries.

4. Some Properties include Speech Recognition, Speech Synthesis, Form Rendering, Location Rendering, Conversational Searching etc.

### 4. METHODOLOGY

#### Flow:

1. **Web API:** Throughout the form of the POST string URL parameter, an API call is included with a query and the service responds in JSON.
2. **API Sends request to Backend:** The system will take in questions asked by the User.
3. **API Response:** The response to the question is in English, which is comprehensible and ordinary.
4. **Information Extraction:** A dataset will consist of all the appropriate information, accompanied by information extraction techniques etc.

#### API Calls:

1. **Client Responsibilities:** The client will send a GET request to the Web API with the question as a URL parameter, The server will reply with appropriate data.
2. **Server Responsibilities:** All API data will be sent as JSON response documents with the Content Type: JSON header.
3. **Response Document Structure:** [REST] specifies that API replies be defined in JSON. A JSON object will be the base of every API response.
4. **Information Extraction:** A dataset will consist of all the appropriate information, accompanied by information extraction techniques etc.

### 5. ARCHITECTURE

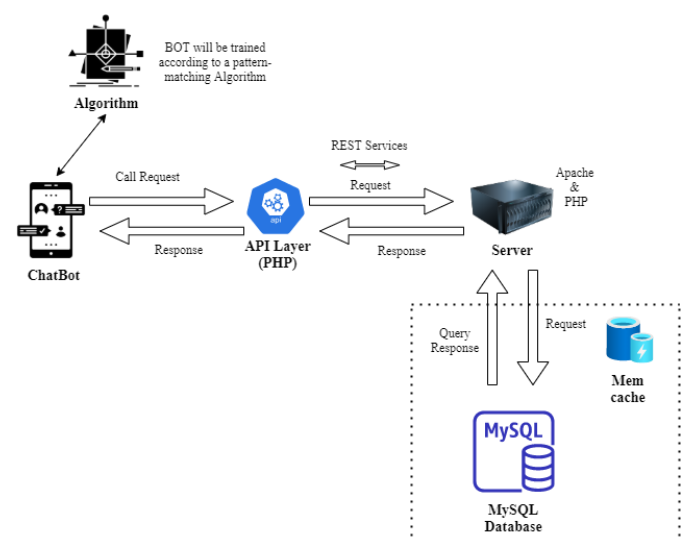


Figure: System Architecture

## SCOPE

An AI chatbot that receives users' questions, attempts to understand and answers the question. This is achieved by conveying an English word into a user-friendly query, then progressing through data to seek the relevant information and then retrieving the answer in a natural language phrase. In other words, it answers your questions like a human, rather than mentioning the possible websites. The key goal is to build a Web API. Web, smartphone and text samples, Messaging interfaces demonstrating the API usage. The aim is to give VTU students and website visitors a fast and a simple way to address their questions and to offer other developers the ways in which This Chatbot can be implemented into their projects.

## 6. IMPLEMENTATION

React.js is now one of Facebook's most popular frontend libraries. It's not like Angular's entire application framework, it's just a view layer. After learning the theory, the moment is right to start, and then it may appear a bit difficult to start, find and demonstrate specifics. But building the first React.js project doesn't have to be that hard.

### 1. Install create-react-app

First, the global(-g) package has to be installed. Open and launch your terminal or console:

```
npm install -g create-react-app
```

### 2. Creating an App

Use the project to run the following command with a name.

```
create-react-app app
```

The command execution installs the needed project dependencies.

### 3. Start the Application

The following commands begin the app

```
npm start
```

### 4. Getting Started

Install the ChatBot Framework

```
npm install react-simple-chatbot --save
```

The command execution installs the ChatBot framework  
or

### 5. Importing

Install the ChatBot Framework

```
import ChatBot from 'react-simple-chatbot'
```

## 7. CONCLUSIONS

All information on a single interface is always difficult without the complexities of navigating through several forms and windows. The VTU chatbot aims to alleviate this issue by delivering an interface to address visitors queries which are common and user friendly. The chatbot system's goal is to

imitate a conversation. Its architecture combines a language model and a computational algorithm to understand information online, using human language and communication between a human and a computer. The key aim of the project is to create an algorithm to identify answers to questions posed by visitors. To develop a database where all the related data is stored and to develop a web interface.

## REFERENCES

- [1] YuhuaLi, David McLean, Zuhair A. Bandar, James D. O'Shea, Keeley Crockett, "Sentence Similarity Based on Semantic Nets and Corpus Statistics", IEEE Transactions on Knowledge and Data Engineering, Volume 18 -No. 8, August2006.
- [2] Emanuela Haller, Traian Rebedea, "Designing a Chat-bot that Simulates an Historical Figure", IEEE Conference Publications, July 2013.
- [3] Pratik Slave, Vishruta Patil, Vyankatesh Gaikwad, Girish Wadhwa, "College Enquiry Chat Bot", International Journal on Recent and Innovation Trends in Computing and Communication, Volume 5, Issue 3, March2015
- [4] "AIML Based Voice Enabled Artificial Intelligent Chatterbot", International Journal of u-and e-Service, Science and Technology Volume 8 -No. 2,2015.
- [5] Amey Tiwari, Rahul Talekar, Prof. S. M. Patil, "College Information Chatbot System", International Journal of Engineering Research and General Science, Volume 2, Issue 2, April2017.
- [6] Rachit Kulkarni, Ankit Methwani, Nakul Pawar, Charmi Valecha, Pooja Shetty, "College Chat-bot", International Journal of Advanced Research in Computer Engineering & Technology, Volume 6, Issue 4, April2017. Chaitrali S. Kulkarni, Amruta U. Bhavsar, Savita R. Pingale, Prof. Satish S. Kumbhar, "BANK CHATBOT -An Intelligent Assistant System Using NLP and Machine Learning", International Research Journal of Engineering and Technology, Volume 4, Issue 5, May 2017
- [7] Yash Mehta, Shreya Sawkar, "The college chatbot", International Journal of Computer Applications, Volume 173 -No. 7, September2017.
- [8] Prof. K. Bala, Mukesh Kumar, Sayali Hulawale, Sahil Pandita, "Chat-Bot For College Management System Using A.I", International Research Journal of Engineering and Technology, Volume 4, Issue 11, Nov2017.