# Analysis on AI Based Computer Program to Process Human Conversation

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Abstract- A lot of companies are building chatbots to help with the pain that they're experiencing right now. The design of user interfaces is about to be radically altered by chatbots. One issue that students have been facing is the need to physically visit the college in order to get their questions answered through the help table. In this work, we introduce a system that utilizes chatbots to provide users with real-time responses to their questions. A chatbot driven by AI forms the basis of the suggested system. In order to respond with the intended purpose, the suggested system first determines the user's context. In order to learn from its users' reactions and demands, the suggested chatbot made use of basic AI machine learning (aiml). Our research indicates that the strength of chatbots is their application in numerous/various disciplines and in our daily lives, based on 9 IEEE papers and 11 standard papers. An organization's reliance on humans and the need for separate systems for distinct procedures can be reduced with the use of chatbots, according to this project's goal.

## I. INTRODUCTION

The goal of creating a chatterbot or chatbot is to establish a dialogue between a human and a device. The integrated gadget has the ability to read sentences and respond to questions or queries by making a call. The consumer's input sentence is well-suited to the answer major. An artificial intelligence (AI)-powered professional device for institute inquiry utilizing an internet-primarily chatbot is the present technical challenge. Every once in a while, we kill time by speaking with amazing chatterboxes that are accessible online. The intended purpose of these chatterboxes is to provide entertainment. Chatbots can learn the user's questions and respond accordingly since they have intelligence built into them. An online chatbot is a computer program that mimics human conversational abilities. Some malicious programs use AI techniques like natural language processing (NLP), picture and audio assessment, and chatbots (sometimes called Artificial Conversational Entities) to resemble human discussions in their natural layout and language [5]. Institute control device chatbotIn order to assess customer inquiries, [2] projects are advancing the use of AI algorithms. This strategy is an online tool that might answer customers' analyzed questions. In order for the bot to assist with answering

questions, users must first choose the query class. Artificial intelligence is used to respond to customer inquiries. Appropriate responses to consumer questions will be provided. Using artificial intelligence algorithms, the answers are provided. In my perspective, customers can inquire without visiting the Institute. It is necessary for users to register and log in to the device. Users have access to a plethora of support pages after they log in. The user can chat with other users and ask questions about Institute activities on several support pages. By means of an advanced graphical user interface (GUI), the computer will react to the operator. Through this online tool, the user can inquire about Instituterelated athletics. Staying informed on Institute sports will be beneficial for researchers and users. An AI is a piece of machinery designed to mimic human intelligence. AI technology enables machines to mimic human behavior and thought processes. A model of artificial intelligence learns just like a person. It deduces its knowledge from the records' latent patterns. People can complete the task 90% faster with AI. These days, artificial intelligence (AI) should be present in nearly every industry, including finance, fashion, education, social media, healthcare, agriculture, security, and soon. What is the Role of AI?

Learning how to handle business problems: In order to achieve the desired outcomes, a thorough understanding of the problem statement is essential. The amount of statistics determines the version's performance, which is a part of records collection and information wrangling. More data means the model is more accurate. Investigate the data, draw conclusions, and establish connections between the skills using exploratory and statistical statistical analysis. Feature sets that have weak or nonexistent correlations with the target function should he removed. The most crucial part of the whole procedure is creating the model. To facilitate model training and evaluation, partition the dataset into train and test sets.

• Verification of versions: Validation is always crucial to get accurate findings. evaluate the model's functioning by comparing its accuracy rating, R2 score, category record, and various other metrics. Install and maintain the model for future activity predictions if it has confidence. quit-customers availability. Be sure to keep the version up-to-date and run preservation checks frequently. These days, chatbots are designed to make the employer's

interaction hobbies easier. The primary goal of implementing chatbots into company operations is to facilitate and enhance customer service interactions. It's compatible with all the major messaging apps, including Facebook, Messenger, Slack, Telegram, and SMS messages. Operate at a bigger scale: chatbots can handle an infinite number of chats, but live sellers are limited to two or three. A user can pose a direct query to the bot, and it will reply promptly. This saves the customer time and solves a lot of customer questions when the business gets a lot of them. When it comes to advertising content through online channels for online conversation, chatbots can take a strain off the customer service personnel. Certain tasks might be made easier with the help of chatbots. Businesses can create a highly engaging marketing campaign using chatbots on the Interactive Advertising Platform. Chatbots can be more helpful for some tasks, such as: • Reducing the time it takes to get to the bottom of the questions.

- Dealing with customer-backed inquiries.
- Making contribution communication easier.

## **II.LITERATURE REVIEW**

Institutes are the primary focus of this project, and as a result, the synchronization of all the scattered and varied data pertaining to the typical Institute timetable is a top priority. Campus interviews, training, site activities, vacations, and special announcements are just a few examples of the kinds of crucial alerts that students often have trouble receiving accurately and on time. The smart campus initiative is an effort to close this communication gap among faculty, students, and the administration of the institute. The use of architectural MVC, which separates the important thing works inside the development of a software like information management, cellular programme display, and internet series, which may be the controller to ensure immediate and efficient maintenance of the application, makes future application maintenance easier in international situations like Institute campus, where knowledge in the form of notices and language can be directly communicated via android devices and made available to students and teachers immediately on their android devices. Through their work, S. Jayalakshmi et al. [1] introduced innovative Answering Our chatbot is capable of generating transformations and supporting optical character recognition. an automated chatbot that uses a text article from a virtual file report to answer the customer's query. This chatbot's singular focus on character recognition is its

Achilles' heel. Knowing how to write text or characters allows one to perform most efficiently. There is no way to use it with speech recognition software. Researchers Nayden Nenkov et al. [2] looked at AI systems that might learn on their own. They aim to automate the interaction between the code and the instructor within the framework of Moodle learning management system, according to their chatbot system vendors. It turned out that the chatbot works great with the Moodle management system but not with any other management tool. Setiaji Bayu, Ferry Wibowo Wahyu [3] This chatbot models human-machine communication by drawing on information stored in a database. The technology is built within the device to recognize sentences and generate a name in response to a memory.Speech recognition strategies are not followed. This chatbot also has the drawback of only presenting info that is already stored in its database. This means it can't function autonomously.

J. Quintero et al. [4] introduced a voice-based chatbot that is both efficient and user-friendly. What happened and how the technology was integrated into an experimental NLE meant to control a humanoid robot. It solves most of the issues that users had with earlier chatbots. It adheres to methods for both textual material and voice recognition. Unfortunately, their chatbot's lack of intelligence and ability to answer questions independently became its worst flaw.

#### **III.GOALS**

Accurate and timely communications, such as those regarding campus interviews, training and placement activities, vacations, and special announcements, are typically a problem for college students. The smart campus initiative is an effort to close this communication gap among faculty, students, and the administration of the institute. Thus, in a worldwide context, such as an institute campus, knowledge in the form of notices and language can be instantly transferred through android devices and made available to both students and teachers directly on their android devices. The idea behind this initiative is that chatbots can cut down on the need for various technologies to handle different tasks, which in turn reduces an organization's reliance on humans. What follows is a description of the primary benefits of this work:

• To support and expand business organizations' client relationships. Activating it is a breeze on any major chat app, including Facebook, Messenger, Slack, Telegram, Text Messages, and more. Chatbots, in contrast to stay marketers, have no upper limit on the number of chats they can handle. The synchronization of all the scant and varied information concerning the agenda of normal enterprise is the main focus of this initiative, which is aimed squarely at institutes. Python and statistics are used to develop the chatbot.

## **IV: SUGGESTED APPROACH**

The system generates three separate UI (User Interface) files: chatbotui, login, and signup. You may generate the corresponding python files with the help of these three files. A number of languages and libraries are part of the planned system, including HTML, CSS, Python, Qt Designer, and many more. The PyQt5 library, which includes all the necessary core files to execute the codes, is the backbone of this system. Additionally, aiml is utilized in this work to aid the chatbot's learning process.

#### SectionA: System Module

As a subfield of natural language processing (NLP), natural language understanding allows computers to decode spoken language and draw conclusions about human meaning. Speech recognition is a technology that can record and transcribe spoken language in real-time. Beyond mere popularity, NLU can peep into the consumer's intent.



Fig. 1: Chatbot Architecture Fig 1 is a chatbot structure diagram wherein the

The main objective of learning systems is to enable blocks linked by strains that depict the connections between the blocks stand in for crucial components and capacities. Additionally, it can reveal the device's inner

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workings, the inputs and outputs at different levels, and the distribution of records and substances via it. The crucial server has an optimized database that stores all the facts. Through the Android app on their cellphones, consumers can view this data (buyer machines).

#### a) Machine learning

in general The capacity for systems to automatically assess and develop from experience without being explicitly programmed is provided by machine learning, an application of computer technology (AI). The field of computer science known as machine learning is devoted to the development of algorithms that can learn from data. the computers to find things on their own, without any help from humans. Section A: Execution

The AIML documents that we use to store the queryanswer pairs allow us to generate content for meaningful interaction. As a user interacts with our chatbot, their questions are answered by comparing them to patterns stored in AIML files that have already been detailed.

B. Lemmatization Through the use of phrase extraction, facts are extracted from the input text. In the question "What is the current placement status?" the words "current," "placement," and "status" are the most important ones. In order to organize the various reflected word types, Lemmatization is used to find the appropriate lemmas of the keywords. As an example, the mapping from require to required all is to require. For this purpose, we employ WordNet, which is part of the "nltk" module in Python.



Fig. 2: Server\_chat.py library

In general, the college information chatbot works as follows:-

•	Let's		start		by
importin	ng	the		chat	
server.py			file. Clients		
will	thereafte	er	be	able	

to deliver new connections

to the server.

• We will strive to select our clientele in some way based on the previous stage.

•	Users	can	now	select	a
usernan	ne	prior	to	connecti	on
to	our	servers.			

• The next step is for the server to collect all incoming messages and send them out to other clients that are linked.

• Message acquisition and distribution to other connected clients is the primary attribute of the server.

In Figure 2, we can see the client-server interaction illustrated using the Server Chat Python package.

## V. METHODOLOGY

Python, artificial intelligence, HTML, CSS, and a plethora of other languages form the basis of this suggested system. A chatbot powered by artificial intelligence. The system's database not only provides the admin with queries but also aids the chatbot in its learning process.



Fig. 3: Process of working of chatbot

Two models are provided in this system that illustrate the chatbot's operation. Two models are provided: one demonstrates how the chatbot gets user inquiries and another shows how it makes responses to such queries.



Fig. 4: Retrieval Based Model

Figure 4 depicts a retrieval-primarily based model in which user queries are entered into the model. After that, the retrieval model will be visited by the context, which includes popular speech and characters. Afterwards, the chatbot will provide a response. A back-end treatment is what it is.



Fig. 5: Generative Based Model

Figure 5 shows a Generative Based Model where users can ask questions using popular speech or characters. Any responses provided by the chatbot will be preserved in the message archive. Once the process is complete, the chatbot will give the user the response. This process is for the front end.



Fig.6. Working Flow

Figure 5 shows the procedure flow for the suggested method. As a preliminary stage, tokenization breaks down

entire sentences into their component words, or phrases. The bigram algorithm is using normalization to get its result. Along with normalization, spelling checking is also completed. Following normalization, the patterns stored in the database are compared with the key words obtained from the bigram output stage.

Then, in order to determine the sentence similarity rating, we need to find the intersection of two sentences: one that is the input query and the other that is a database sample. Retrieving matched templates allows for additional processing of the statistics. The last display is the answer to the customer's query.

## **VI: FINDINGS FROM THE EXPERIMENT**

We have utilized AIML and Python in this system to facilitate code execution. The homepage was built using HTML and CSS. After navigating to the login/signup page, we are able to initiatedirect communication with the

AI chatbot. Following that, we will also be able to view a database that contains information on the website's users. The only person with the authorization to access that database—the admin—can view all of the user details stored there.



Fig. 7: Login/Signup Page

As seen in the graphic above, a new user must first register by providing the system with all of the required information. After that, he can access the chatbot by providing the credentials requested by the system.



Fig. 8: Conversation with the Chatbot

The dialogue between the user and the chatbot is depicted in Figure 8. The user is inquiring about the college admissions procedure, the highest package, and numerous other things, as seen in the image above. Moreover, the chatbot is promptly responding to the user's questions.



Fig. 9: Communication with Admin

Figure 1 above.9. displays the conversation with the administrator. The chatbot provided the admin's email address because it was unable to answer the user's question, as shown in the previous picture. This allows the user to get in touch with the admin and get their questions answered.

661	iew Database	Open Database	Write C	hanges a	& Revert Changes	Geopen Project Geopen	e Project	Attach Database 🔀 Close Databas
Data	abase Structure	Browse Data	Edit Pragmas	Execute SQ	L			
Table	USERS	~ 😒	ତ 💊 🖷	۵ 🖷	- <b>- - - - - - - - - -</b>	💼 🍇 Filter in any column		
	FIRSTNAME	LASTNAME	CONTACT	BRANCH	SEMESTER	EMAIL	PASSWORD	•
	Filter	Filter	Filter	Filter	Filter	Filter	Filter	
1	admin	admin	99999999999	AD	AD	email	password	
2	Prashant	Kumar	8800669571	CS	v	email@email.com	password	
3	prashant	tyagi	1234567890	cs	1	abcd@gmail.com	12345	
4	shivam	chahal	9999661345	it	1	shivam@gmail.com	12344	
5	shivam	hu	9999661345	it	8	shivamsinghsh@gmail.com	9988	
6	Prashant	tyagi	999999999	it	8	pt@gmail.com	3333	
7	р	r	99999999999	it	7	a@a.com	1234	
8	ad	de						
9	as	ds	89	it	1	adfg@gmail.com	2356	
10	as	df	23587410	п	1	asdf@gmail.com	7894	

#### Fig.10: Database

Figure 1 above. The login page database should be displayed. The administrator can see all the user's information and get in touch with them immediately for any follow-up.

## A. Parameter for the Simulation

It is the simulation parameters that allow for multiple iterations of the simulation. There are three portions to the mechanism. The first module takes an allowed user's query and uses it to do tokenization, bigram, sentence similarity rankings, and retrieve or update the appropriate template from the database. The second module then executes these operations. The reply shown to the individual is in the third module.

#### A. KPIs for Performance

As a representation of the produced machine's efficacy, the performance criteria Deep Analytics, Conversational UI, Natural Language Processing, Trainable, and Human Handover are planned. The machine can answer to multiple users at once based on the employer-controlled database. Consequently, the created machine's overall performance is determined by the rate of fact delivery or the quality of language processing. Before comparing chatbots for conversational UI, their overall performance was tested for human handover.

## VII. A STUDY OF COMPARISONS

"College Information Chatbot vs. Existing Chatbots" is a comparison of chatbots that are already in use with university records: The gadget is designed to make it easier for students to keep up with their school or university's athletic events. Reducing workloads at educational institutions is the root source of this problem. Once students have registered on the site, they can go to the appropriate section to ask the Chatbot questions.



Fig. 11: Graph of comaprison between chatbots

You can see how several chatbots stack up against one another in the graph up there. Efficiency grows over time, as seen in the incremental graph.

## FINAL THOUGHTS

In sum, facts from the university One area where chatbots might be helpful is in directing students to reliable sources of information. Candidates from all around the world can use it to get answers to questions about academic subjects and fees. Rather than physically visiting each campus, students can access all the necessary information with just a few taps. By taking over work that people aren't capable of doing, it boosts productivity. Applying sentiment analysis to academic data By archiving all talks in a database, chatbots accurately identify the person's query as Excellent, Bad, or Neutral. But the system grew popular in part because of its empathic features; this is because the queries cover a lot of ground, and the computers need more specific data to handle all of the queries, some of which may be off script. Lively learning facilities to improve bot efficiency and handle offscript requests are still necessary.

#### **PROSPECTS FOR THE FUTURE**

Improving the current features of the school inquiry chatbot is as simple as adding data for each department, training the bot with different records, testing it on a live website, and then adding comments with more educational data to it. Some of the most recent additions to the bot include: • A speech popularity capability that allows students to ask the bot questions aloud and receive instant responses. • Cooperation with several channels, such as phone calls, text messages, and other social media platforms like Skype, Facebook, and Twitter. • Handling context-aware and interactive questions, where the bot will step into the student's current conversation.

The ability to reset passwords and enroll in direction 46 are examples of services that can be included.

• Making it possible for the bot to conduct analytics based on customer sentiment, with the goal of continuously retraining it to better understand human emotions and develop greater empathy.

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