

## WHATSAPP CHATBOT FOR CAREER GUIDANCE

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**Abstract** - A chatbot is an application that provides a virtual environment to communicate with users. Many companies like Amazon, Flipkart, Reliance, and so on are making use of these chatbots to have effective conversations with their customers. The bot that we have developed is mainly centralized in providing various career options for an individual after his/her UG. This bot also provides a roadmap along with the skills required. For developing this bot we've used various dependencies like Twilio, flask, and ngrok. The process of accessing this chatbot is straightforward and the user can use it whenever they require it.

**Key Words:** Chatbot, flask, ngrok, Twilio.

### 1. INTRODUCTION

Choosing a path in a career is a bit like choosing a trail in the woods when you reach a point. The most common choice is between 1) a nice, easy trail that leads to a waterfall, or 2) a rugged, hiker-grade trail that goes up the mountain, takes three times as long, but rewards you with a great view and a lot of experience. Very few people decide on something in high school and stick with it all the way because life deals you odd cards.

This requires suggestions and guidance from authorized members. Analyzing their suggestions and putting them in one place makes it easy to understand for aspirants. All that analyzed data can be sent as a message to the user through WhatsApp. WhatsApp is the leading mobile app. With at least 2 billion dynamic month-to-month clients, WhatsApp is the most prevalent mobile messenger app presently. It surpassed other messaging services by millions.

The analyzed data for professions in a career is sent as messages through the WhatsApp bot. A WhatsApp chatbot is a computer program designed to automatically answer customer questions about products and services, share content, and send notifications.

For creating a WhatsApp bot, we are using Twilio, ngrok, and Flask in Python. Flask is a lightweight Python web framework that offers useful tools and features that make it easy to create Python web applications. Ngrok is a cross-platform application that allows developers to expose a

local development server to the Internet with little effort. Twilio Frontline is a programmable mobile app that enables digital relationships through messaging and voice to enhance sales effectiveness. Integrate the app into any CRM or customer database and build customer relationships.

The WhatsApp bot that we are building is a career-based one, and we have around 50 professional roadmaps. If you type "software engineer" as input, it gives the user the whole roadmap on how to become a software engineer with an attached video as a reply. The main appeal of WhatsApp is that it allows you to send and receive calls and messages using only one Internet connection, which means that it is practically free of charge to use and perfect for international calls. There are no entry fees and there are no data plan quotas to worry about. The roadmaps that are sent as replies are much more annotated and cleaner and easy to understand.

### 2. LITERATURE SURVEY

We, the 21st generation, are lucky enough to live in such a world wherein every bit of information is available just with a click. In this process of sharing information, chatbots are taking up the lion's share since they have proved to be very successful in communicating with people, especially in the marketing field. Various companies like reliance, airtel, and various shopping apps like Myntra, Flipkart, Amazon, and so on are making use of these chatbots to establish a customer-friendly ambiance. To have a detailed understanding of our project, we've undergone several approaches and some of them are described below

Hrushikesh Koundinya K et al.(2021), This paper discusses the aim of their project was to add a chatbot feature and Application Program Interface(API) for the college in which they were pursuing their UG. This project has made use of many methods in AI(Artificial Intelligence) & ML(Machine Learning). This bot was mainly implemented to mentor the users of their college website. It used various tools that brought out the methods of natural language processing. The bot that they developed was a web-based one whose main job was to clear all queries the users had. This chatbot would initially greet the user and after wishing them the bot asked the users to login into the

device by entering their mail. Then the user will be able to find a variety of buttons in the User Interface(UI) that correspond to the different categories of their engineering college. The bot would then ask the user whether it helped clear their queries. If the user can't find apt answers for the queries raised by them, they can continue to chat by elaborately explaining their queries. Various machine learning algorithms were then applied to this query and the most suitable answer was displayed to the user. The developers of this project provided a special section in this chatbot wherein the users were able to give their valuable reviews about the chatbot and this helped the developers to understand the loopholes in their bot. [1]

Shreyashkar Sharma (2020), This paper speaks about a chatbot using python. This bot was designed with the help of various classification methods like pattern matches, and natural language processing. In this project, Shreyakshar Sharma has simply created a very basic WhatsApp chatbot. This project cited the pros and cons of the usage of chatbots. This research paper elaborated that chatbots can be connected with the help of a database and every user needs reliable answers. This whole process can be made successful with the help of a database. The human understandable language was transfigured into data with the help of natural language processing. Shreyakshar Sharma stated that NLP is proven to be highly efficient in fetching the most suitable answer for a query raised by the user. [2]

Vijayakumar et al.(2019), This paper introduces the development of a Student Bot for academic information with the help of Artificial Intelligence and Machine Learning. And they concluded that during this work, the proposed Student Bot would permit users to just type the request associated with their university and branch and can get an answer instantly. The projected system needs to develop a database wherever related data are going to be stored and develop an online application console for the operator to get it. The implementation was assessed and sustained the standard of answer and it has done well. [3]

Sarthak V et al.(2017), This paper speaks about the development of an AI Intelligence Chatbot in the Android System. They believed that a Chatbot could also be an informal manager where a bug is supposed to simulate a knowledgeable chat. It can yield operators in many layouts like a transcript, speech, feelings, etc. Aimed at this purpose, many exposed source platforms stay existing. Computing nomenclature comes from Extensible language which is used to method a conversational agent artificially. During this paper, we use "program-o" which is an AIML decoder aimed at the group of the answers to operators' say. [4]

Chinedu Wilfred et al.(2021), This paper tells about the development of a Chatbot for teaching Python Programming using Artificial Intelligence and named it "Python-BOT". He was conjointly aforesaid that the applications of Artificial Intelligence in schooling zone part are increasing constantly. One in particular of the new requests presented to Education is the Chatbot machinery, familiarized support education, and form tasks. An extended downside in computing Education is the way to progress platform comprehension for beginner computer operators. Up to now, Communications Security Establishment proceeds have not got any Chatbot for backup the teaching of software design. This paper anticipated a Chatbot named Python-Bot that assists beginner computer programmers to know Python's straightforward syntactical constructions and syntax. [5]

Hanggi Kurniawan et al.(2021), This paper mainly concludes that based on the results of the Waterfall method tests conducted on the chatbot application, it can be determined that the chatbot application is capable of replying to the question posed by the computer operator based on the knowledge given. Chatbots may be interacted using WhatsApp, which is available online. The created chatbot application may give information about student registration and college. [6]

Gaurang Jindal et al. (2020), This paper says WhatsApp chatbots or sensible assistants are a unit of dramatically ever-changing businesses. There's a large variety of chatbot building platforms and conjointly a large variety of chatbot varieties that area unit accessible for varied enterprises, like e-commerce, retail, banking, leisure, travel, healthcare, then on however because of this approach, we would like to create an additional user-centric chatbot which can facilitate each user and business to handle immense client base at a time. Chatbots will reach an oversized audience on electronic messaging apps and be more practical than humans. they will change into a capable information-gathering tool within the close to future. [7]

P. Shanmugapriya et al.(2020), This paper speaks about "Development of Chatbot using Python". And in the paper, they concluded that the model aims to reduce manpower and give response to user requests as quickly as possible. Early days, the users used to send a query mail to the actual website administrator and it'd take a few days for the location administrator to reply to the mail. Chatbots will overcome this delay, chatbot satisfies the user's request or question instantly with relevant responses. These days several websites of banks, academic establishments, and business sectors have developed their chatbots to satisfy user requests in a quicker time. [8]

Akshay Kumar et al.(2019), This paper talks about “Future Chatbots, backed by machine-learning technology, can bear in mind past conversations and learn from them to answer new ones. The challenge would be conversing with the varied multiple larva users and multiple users. In future work, we can create a chatbot that’s based on AIML and LSA. This technology can alter a shopper to act with a chatbot in an additional natural fashion. We can enhance the discussion by as well as dynamical patterns and templates for general shopper queries exploitation AIML and also the right response area unit gave additional typically than LSA.” [9]

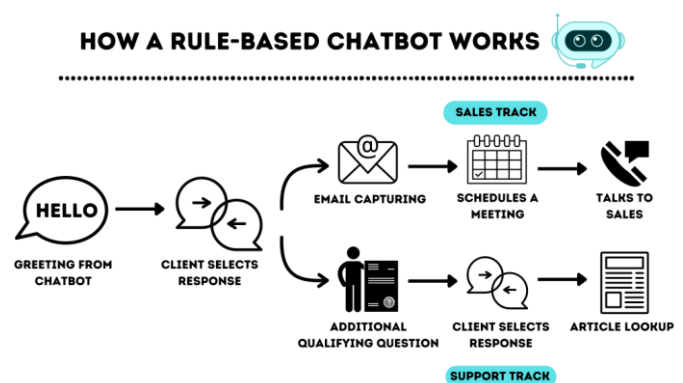
Shingte, Kshitija et al.(2021), This paper discusses how to solve the queries of students for admissions to reduce the administration’s consumed time and paperwork by which they can access the information about the college from home by interacting with the chatbot(with the computer). They feel like they are interacting with humans, which reduces the burden on the administration to clarify the queries of every individual. This project is developed using the chatterbot algorithm which is a python library that generates an automatic response to a user’s input. The chatbot provides answers to the queries provided by administrators. Users can ask questions about the college inquiry process, course details, eligibility criteria, and admissions. Users need not to go college always for queries. This chatbot takes the query from the user and if it matches with the database gives a knowledge base response and if not match with the database it gives a predefined response. It gives an accurate and quick response to users. [10]

### 3. PROPOSED APPROACH

These days, most of students are opting for Computer Science and Engineering in their under graduation as it offers a wide variety of career options. The problem arises when one has to decide their career option at the time of placement. Many students are ignorant of the various jobs that are available after completing their degree in Computer Science Engineering. Students are facing difficulty in completely understanding the requirements of a particular profession that is offered in the market. To overcome this problem, we have come up with the idea of creating a chatbot that will give you a clear idea of the professions that are available in the field of Computer Science Engineering. This chatbot is mainly designed to lay a perfect way to pursue your dream career. Using this chatbot is very simple and easy. All you need to do is to enter any of your dream careers related to Computer Science Engineering such as data scientist, test automation engineer, java developer, video game developer, IT architect, level designer, IT technician, IT consultant, computer engineer, Information technology consultant, technical writer, etc and the bot will give you a road map

and skillset of that particular profession. This bot is exclusively designed for all those students who are looking for help and who are confused about choosing a proper career option after completing higher studies. This chatbot includes 50 various career options that one can opt for after completing his/her studies. Since technology is becoming the part and parcel of our lives, various professions are born every single day that we are ignorant of. This chatbot allows the students to explore various such professions and it will also help the graduates in getting a clear picture of the bachelor’s degree, master’s degree, and skills required to get into that profession.

Here is a brief picture that shows you how the chatbot works

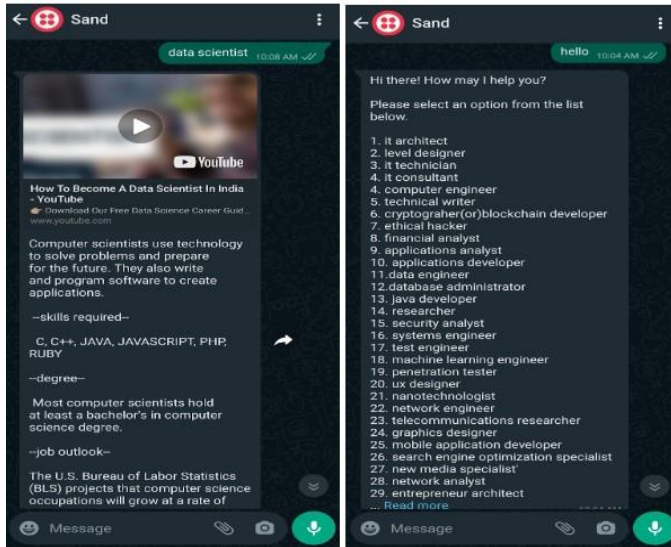


### 4. EXPERIMENTAL SETUP

Flask is a lightweight Python web framework that is used to create Python web applications more simply. It offers far greater flexibility to developers and has a very open foundation. Flask saves time as building a web application is a lot quicker than using a single Python file. And the communication tool used is Twilio, which performs communication functions using its web service APIs. Twilio Frontline is a programmable mobile app that enables digital relationships through messaging and voice to enhance sales effectiveness. Integrate the app into any CRM or customer database and build customer relationships.

Using Twilio, flask, and ngrok, WhatsApp bot responses are a lot quicker. This WhatsApp bot is a career-oriented tool that provides information about the career you want to pursue. Type in the profession and the entire information is provided, along with a guided video. The code is written in a single Python file that uses Web Framework. And a command is written in Ngrok that exposes local server ports to the Internet. A URL is generated. Paste that URL into the Twilio sandbox and the bot is ready. Before you do that, create a Twilio account. This bot is a career-based one, which gives you a proper roadmap for a particular profession. For example, if you

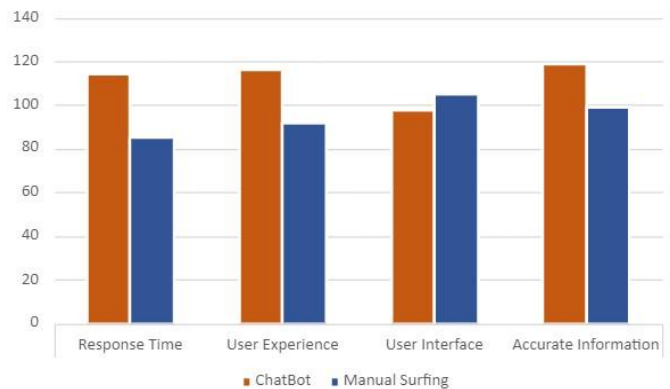




chatbot since we can access any website. But the chatbot’s user interface is constant all the time. Response time in a chatbot is less compared to manual surfing as we need to go through multiple websites to gather accurate information. User experience is more in chatbot compared to manual surfing. We get accurate information in chatbots which is already gathered from multiple websites compared to manual surfing.

Comparison between Chatbot and Manual Surfing

	Response Time	User Experience	User Interface	Accurate Information
ChatBot	114	116	98	119
Manual Surfing	85	92	105	99



### 5. RESULTS AND DISCUSSION

The chatbot is a software application used to type "data scientist", you will get a road map and an attached video on how to become a data scientist. This bot uses various resources that are uploaded by reputable users and their opinions. This helps students to understand the profession in a great way.

The roadmap contains the skills required for that particular profession and the certifications, degrees, and more such information, which is categorized efficiently. By clicking the link given by the bot, users can watch the detailed information in a video.

Communicate with humans. Chatbots are interactive agents. They make our work easier. Manual Surfing is the traditional method where we have to search about every profession in a web browser. In manual surfing, we will get so much information for a single query. We need to go through every website to get accurate information which is a time-consuming process. Chatbot helps to reduce consumed time in accessing information. We have written code in a flask and used ngrok to host the local server, and Twilio sandbox to get interacted with the people on WhatsApp. We have to give input on the exact profession names written in the code since we didn't use natural language processing to understand and give the related information as a result. For example, when we give 'hi' as input without using NLP it results from the information present related to hi, if and only if the 'hi' is in the code. But we get the result using NLP even if the exact word isn't in the code.

We have analyzed the experience of 140 people in our network. Their experience varies from manual surfing to chatbot in parameters such as user interface, user experience, response time, and accurate information. In manual surfing, the user interface is better than the

The chatbot that we've created will assist you in choosing a career after your UG. Chatbot gives the best experience compared to manual surfing in many aspects like user experience, user interface, response time, and accurate information. As a part of this project, many research papers from various institutions were analyzed and their detailed description is given in the literature survey. This paper also includes a detailed explanation of how the entire bot works. If an individual wishes to know about a particular profession, they have to browse a lot on the net which is a time taking process. So, our motive is to make this work easy by providing detailed information of the maximum number of professions with just a click. Since the information is readily available within the bot, it is proved that the latency of the chatbot is very less. Various dependencies like ngrok, and Twilio were also used in creating this bot. In addition, chatbots are user-friendly too; hence, a chatbot will come in handy since one need not learn any complex algorithms to use this chatbot. All we need is a smartphone and a Whatsapp account.

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