



Miniproject report on Chatbot

Btech (SVKM's NMIMS)



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A Mini Project Report

ON

“ARTIFICIAL INTELLIGENCE”

INCLUDING

“PROJECT: CHATBOT”

SUBMITTED BY:

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UNDER SUPERVISION OF

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DEPARTMENT OF INFORMATION TECHNOLOGY

**NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY,
GREATER NOIDA**

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COURSE CERTIFICATE

GUIDED PROJECT 1



Guided Project 2



17-Apr-2023

Nashrah Hareem

has successfully completed

Python 101: Develop Your First Python Program

an online non-credit project authorized by Coursera Project Network and offered through Coursera

Ryan Ahmed

Ryan Ahmed
Adjunct Professor
Coursera Project Network

PROJECT
CERTIFICATE



Verify at:

<https://coursera.org/verify/2NRWWV61ZG3E>

Coursera has confirmed the identity of this individual and their participation in the project.

Prerequisite Knowledge Required

1. Student should have depth knowledge of programming.
2. Student should know some key concepts of Python programming.
3. Student should know basics of computer and how it works.
4. It is preferred to get hands on Jupyter notebook basic and its syntax, and other type declaration.
5. Student should know about basic of machine learning.
6. Student should know about the basic ARTIFICIAL INTELLIGENCE.

Text Classification

Introduction:

CHATBOT , also known as conversational agents, are designed with the help of AI ([Artificial Intelligence](#)) software. They simulate a conversation (or a chat) with users in a natural language via messaging applications, websites, mobile apps, or phone.

There are two primary ways chatbots are offered to visitors:

- Web-based applications
- Standalone applications

Chatbots represent a potential shift in how people interact with data and services online. While there is currently a surge of interest in chatbot design and development, we lack knowledge about why people use chatbots.

Here are specific steps to keep in mind for chatbot development.

Chatbots are not a recent development. They are simulations that can understand human language, process it, and interact back with humans while performing specific tasks. For example, a chatbot can be employed as a helpdesk executive. Joseph Weizenbaum created the first chatbot in 1966, named Eliza. It all started when Alan Turing published an article named “Computer Machinery and Intelligence” and raised an intriguing question, “Can machines think?” ever since, we have seen multiple chatbots surpassing their predecessors to be more naturally conversant and technologically advanced. These advancements have led us to an era where conversations with chatbots have become as normal and natural as with another human. Before looking into the AI chatbot, learn the [foundations of artificial intelligence](#).

Today, almost all companies have chatbots to engage their users and serve customers by catering to their queries. We practically will have chatbots everywhere, but this doesn't necessarily mean that all will be well-functioning. The challenge here is not to develop a chatbot but to develop a well-functioning one.

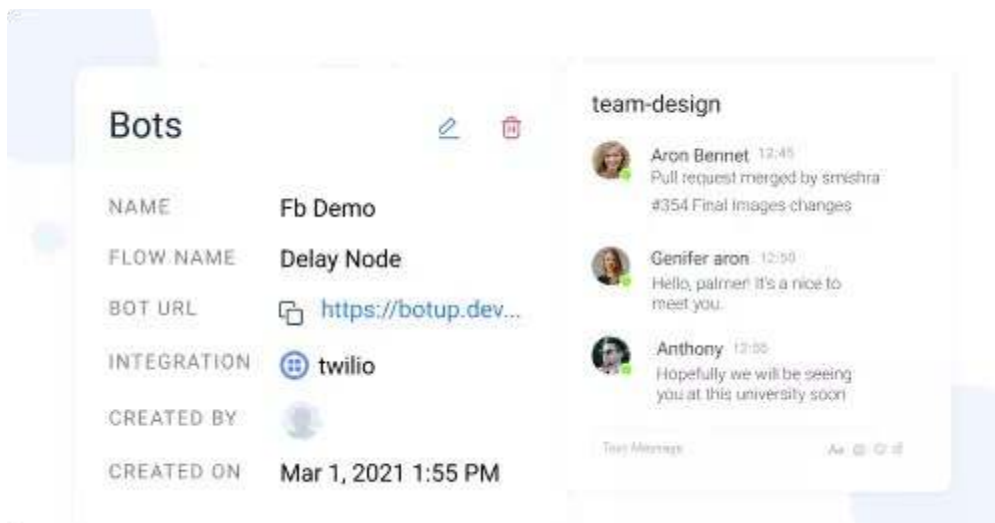
What is CHATBOT ?

Chatbots are conversational tools that perform routine tasks efficiently. People like them because they help them get through those tasks quickly so they can focus their attention on high-level, strategic, and engaging activities that require human capabilities that cannot be replicated by machines.

- Chatbots answer questions and inquiries. ...
- Book tickets to events/shows with chatbots. ...
- Chatbots to build remarkable customer experience. ...
- Chatbots can confirm orders and track shipping. ...
- Chatbots help you collect customer feedback efficiently. ...
- Chatbots assign customer requests to support teams.

What is the Purpose of the Chatbots?

[AI chatbots](#) have been rapidly making their way into a variety of different categories, especially in the consumer-based space. These chatbots are known for being able to simulate a conversation with a user, often utilizing natural language that allows for deeper connections and more natural interactions. Chatbots can be found in messaging applications, websites, mobile apps, or through the telephone



Why are chatbots important? Chatbots are without a doubt one of the most modern and promising expressions of the relationship between humans and machines. their use in all fields, from customer service to data collection, is transforming the way that we view machines and how they interact with

us. Artificial Intelligence-powered writing assistants offer businesses an opportunity unlike anything else they've seen before. They can interact with their customers in new, powerful ways, creating brand loyalty and converting prospects into customers on a regular basis.

Online chatbots can save time by automatically answering customer questions, providing accurate responses to lead generation prompts, and even engaging prospects on social media for increased engagement. [Messenger chatbot](#) can make online shopping more enjoyable by ensuring. However, from a technological point of view, a chatbot only represents the natural evolution of Question Answering systems leveraging Natural Language Processing. Formulating responses to questions in natural language is one of the most common Examples of Natural Language Processing being applied in various enterprises' end-use applications.

Behind the Scenes: How a Chatbot Works

There are two different tasks at the core of a chatbot:

- User request analysis
- Returning the response

User Request Analysis

This is the first measure a chatbot will take in order to fully understand what you are trying to say. The chatbot will analyze your request and identify any keywords or phrases that can help it better understand your intentions. It can also extract any important information you mention in your message.

The ability to identify the user's intent and extract data and relevant entities contained in the user's request is the first condition and the most important step at the core of a chatbot: If you are not able to correctly process their requests, you will not be able to answer them. you won't be able to provide the correct answer.

Automate customer support and solve 80% of customer issues with AI Chatbot [Start Free Trial 14 Day Trial](#)

Returning the Response

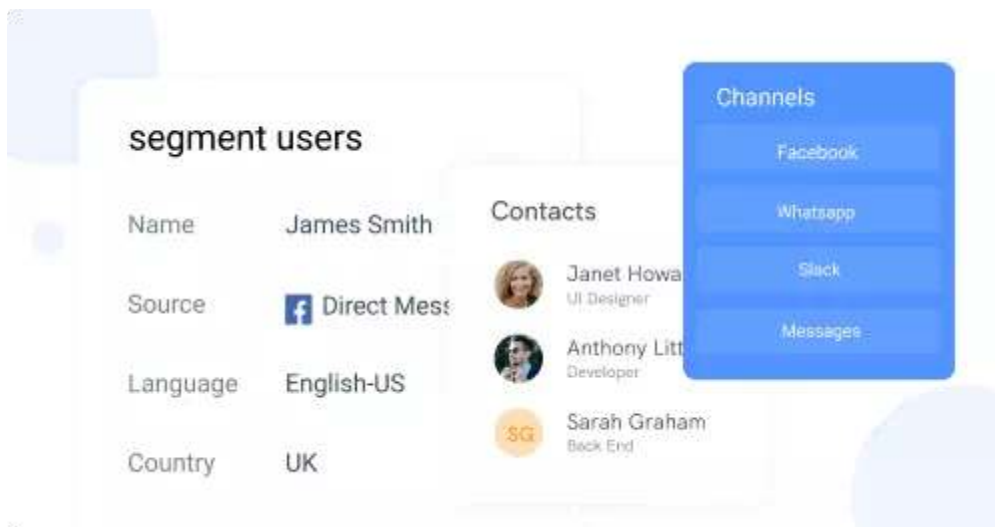
Once the user's intent has been identified, the chatbot must provide the most appropriate response for the user's request. The answer may be:

- A generic and predefined text;
- A text retrieved from a knowledge base that contains different answers;
- A contextualized piece of information based on data the user has provided;

- Data stored in enterprise systems;
- The result of an action that the chatbot performed by interacting with one or more backend applications; or,
- A disambiguating question that helps the chatbot to correctly understand the user's request.

Why Chatbots are Important

Chatbot applications are quickly becoming more common in the [customer service](#) industry for their ability to streamline interactions with customers and reduce the cost of customer support. By lowering the cost of contact with firms, chatbots also provide multiple avenues for increasing customer engagement and operational effectiveness.



To be successful, a chatbot solution should be able to effectively perform both of these tasks. Human support is very important; regardless of the kind of approach and the Chatbots are only as useful as the platform that they are hosted on. Platforms are tailored to specific needs, so it is important to find the right platform for the bot. Platforms require human intervention for configuring, training, and optimizing chatbot systems, so it is important to have qualified support staff in order to get the most out of this technology.

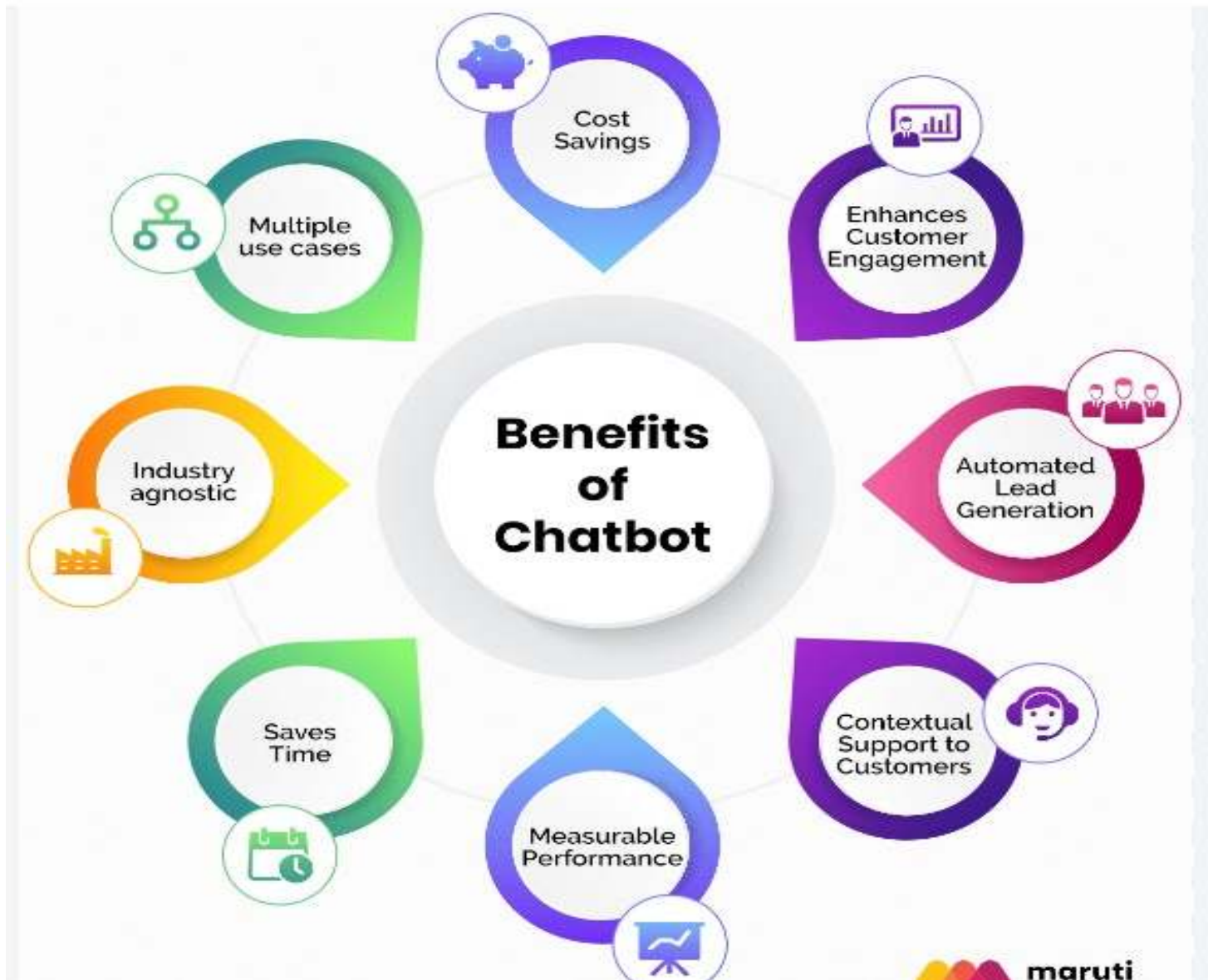
Which Chatbot Application is Right for You?

Artificial Intelligence developers have several different approaches and tools that they can use to create a chatbot. Depending on the desired use-case, some AI technologies are more appropriate than others. To achieve the desired results, it is important to combine different chatbot technologies in order to make the most out of them. Artificial Intelligence form such as natural language processing, machine learning, and semantic understanding may be the best option.

The software provides a set of functions that makes computers understand human language and respond appropriately to it. It has been shown to improve productivity and quality of work for

employees who use it as well as those who supervise them. In the upcoming posts, we will be taking a macro-view of the main chatbot applications so you can evaluate them based on your needs and desired goals.





ABOUT THE PROJECT:

So in this Chatbot project, we are going to make an AI-based contextual chatbot that will maintain the context or in which sense or proportion the user is asking a query. Further using deep learning techniques in Python, we will construct a Sequential model for our training sets of data. The intents, patterns, and responses will all be used to train the chatbot. The user's query will be mapped to the intents class using neural networks, which will maintain context and then return a random response.

Prerequisites for Python Deep Learning Chatbot project:

Modules required: nltk, pickle, tensorflow, numpy, sklearn

The versions which are used in this project for python and its corresponding modules are as follows:

1. Python: 3.8.5
2. Tensorflow: 2.3.1
3. sklearn: 0.24.2
4. pickle: 4.0
5. numpy: 1.19.5
6. nltk: 3.2.5

Challenges For Your AI Chatbot

In the current world, computers are not just machines celebrated for their calculation powers. Today, the need of the hour is interactive and intelligent machines that can be used by all human beings alike. For this, computers need to be able to understand human speech and its differences.

NLP technologies have made it possible for machines to intelligently decipher human text and actually respond to it as well. However, communication amongst humans is not a simple affair. There are a lot of undertones dialects and complicated wording that makes it difficult to create a perfect chatbot or virtual assistant that can understand and respond to every human.

To overcome the problem of chaotic speech, developers have had to face a few key hurdles which need to be explored in order to keep improving these chatbots. To understand these hurdles or problems we need to understand how NLP works to convert human speech into something an algorithm or AI understands. Here's a list of snags that a chatbot hits whenever users are trying to interact with it:

Build a ChatBot Using Python



What is the Future of Chatbots?

The future of chatbots is still up in the air. What is evident, however, is that these initiatives are still in their infancy and will very certainly undergo numerous revisions before becoming widely adopted.

#1

Build and improve your bot conversation flows to engage and increase leads

#2

One bot for Website, Whatsapp, Facebook, and SMS

#3

Nurture your leads faster with built-in CRM

#4

Create bots from rich & advanced template library based on your requirement

#5

Design bots using visual drag-and-drop builder with no code

#6

Use the REST step to integrate your bot flow with your database and backend

#7

Enhance service through advanced reports and revisiting customer conversation history

#8

Share appointment links, allow users to call and chat using built-in tools

#9

Unbelievable pricing - the lowest you will ever find

#10

Everything your business needs - 50 apps, 24/5 support and 99.95% uptime

What Makes the Best Chatbot Software?

Businesses that favor one-on-one or telephone talks are now obsolete as the world of technology expands. Customers are now demanding quicker forms of communication via messenger programs. The only way to improve conversion rates in the market is through [conversion rate optimization](#). Experiences that make the lives of customers and employees more accessible, safer, more enjoyable, and, of course, more productive!

Wondering What is the Future of Chatbots?

Chatbots can provide buyers with a great experience across all devices, offering deep insights about the buyer that businesses can use to make personalized offers. Chatbots help people obtain the information they need and solve their problems.

A company's credibility and the quality of the customer experience are two essential components of any company wishing to achieve a successful business model.

Many well-known companies are now using [ai chatbot](#) to keep up with the changing world. The technology sector has seen a massive increase in AI development, which has led to the creation of chatbots that can help users easily find the information they need online.

Chatbots powered by artificial intelligence effectively create a strong brand image. They will continue to evolve and play an important role in customer service for businesses.



References

Thank you.

REMARKS