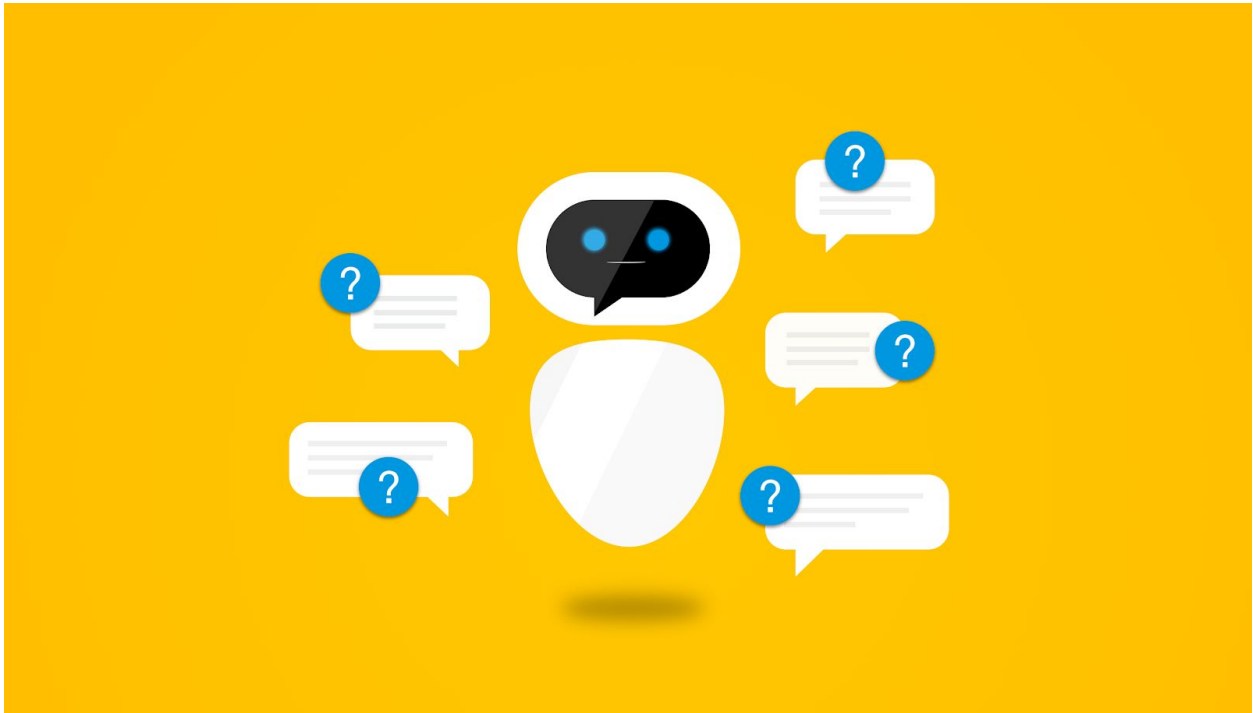


BUILDING A CHATBOT

# JORDAN: OUR PERSONAL HOUSE AI

REPORT BY : AAFREEN, BODDAPU DEEPAMAHI, MASHA SAKEER

---



## Introduction

A **chatbot** is an artificial intelligence that simulates a conversation with a user through apps or messaging. Chatbots are the future of AI, as they provide the closest to a natural conversation between humans and machines. Chatbots are not new to us; the first chatbot was Eliza, but it was not as complex as the chatbots we have nowadays, such as Siri or Alexa.

---

---

Due to the new ML and AI techniques, chatbots are expected to complete **90%** of our tasks in the future, but there is still a long way to go. The progress we have made with chatbots thus far is, nonetheless, astonishing

## **Methodology**

We have to consider a few rules with which we will base the design of our chatbot.

### **Type**

Before we start implementing a chatbot, it is important to decide what type of chatbot we want to implement: rule-based, self-learning, or a mixture of the two

Self-learning chatbots: Self-learning chatbots use ML and AI techniques and algorithms to save the inputs from the user and use them later.

Rule-based chatbots: Rule-based chatbots have predefined rules that they follow.

### **Target audience**

We must know the target audience for which we are making our chatbot. We cannot have a universal chatbot that can answer all questions related to a variety of possible problems.

### **Natural language**

---

We should also keep in mind the natural language of communication for the chatbot. We will choose the natural language after we have decided on the target audience.

## Responses

We also need to provide appropriate responses for initial questions to the chatbot.

## Working

The code for the chatbot is fairly simple and can be found [here](#). Let's outline the steps in creating a functional chatbot:

1. **Create a chatbot:** This is done using the `create_bot` function . The function takes the name of the `bot` as an input argument. This function returns an object, called `bot`, which is further used in the program. You may set the name of your choice. In our case, we have set it to `Jordan`.
2. **Train the chatbot:** This is done using the `train_all_data` function. The data we are training the chatbot for is shown [here](#). The input argument of this function is the `bot`.
3. **Train with custom data:** We train the chatbot with custom data using the `custom_train` function .
  - The first input argument of this function is the `bot` itself.
  - The second argument is the custom data we want to train. This custom data takes the form of a Python `list`. The first element of the list is the question and the second element is its answer .
4. **Start the chatbot:** Start the chatbot using the `start_chatbot` function . The input argument of this function is the `bot` we want to start.

---

## Features

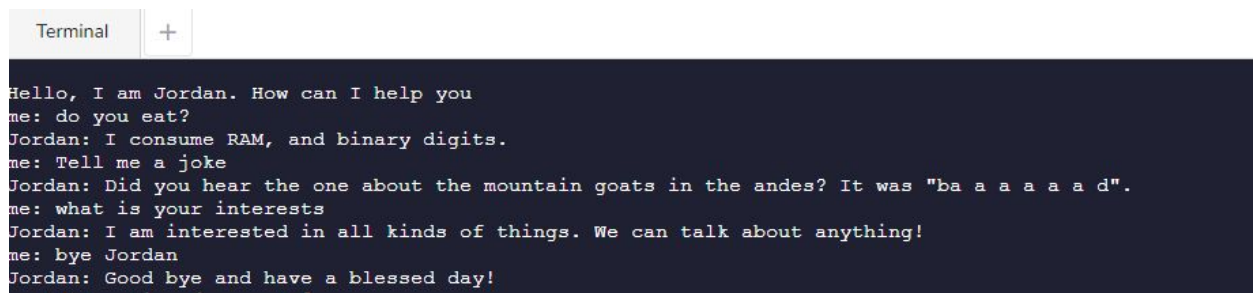
- We have used a Python **library**, `chatterbot`, to implement a chatbot.
- This library generates automated responses to the user input. The responses are based on machine learning algorithms implemented in the library.
- The ML algorithms make it easier for the chatbot to improve and evolve its responses over time as it collects user responses.

## Problem Statement

We ( Aafreen, Deepa, Masha) have just bought **Jordan**, the smartest AI in the world, for my (Aafreen's) house. Now we have to set it up for use.

## Solution

Trained Jordan with all of the world's information and then trained it with my (Aafreen's) personal information for restricted access.

A terminal window with a dark background and light text. The title bar says "Terminal" and has a "+" icon. The conversation is as follows:

```
Hello, I am Jordan. How can I help you
me: do you eat?
Jordan: I consume RAM, and binary digits.
me: Tell me a joke
Jordan: Did you hear the one about the mountain goats in the andes? It was "ba a a a a d".
me: what is your interests
Jordan: I am interested in all kinds of things. We can talk about anything!
me: bye Jordan
Jordan: Good bye and have a blessed day!
```

To prevent unauthenticated access to my house, only three people are allowed to access Jordan: me (**Aafreen**) and my **team mates Deepa and Masha**.

```
1 from functions import *
2
3 # create chatbot
4 home_bot = create_bot('Jordan')
5
6 # train all data
7 train_all_data(home_bot)
8
9 # check identity
10 identity = input("State your identity please: ")
11
12 # rules for responding to different identities
13 if identity == "Aafreen":
14     print("Hello, I am Jordan. How can I help you.")
15
16 elif identity == "Masha":
17     print("Aafreen is out right now, but you are welcome to the house.")
18
19 elif identity == "Deepa":
20     print("Aafreen is out right now, but you are welcome to the house.")
21
22 else:
23     print("Your access is denied here.")
24     exit()
25
26 # custom data
27 house_owner = [
28     "Who is the owner of this house?",
29     "Mark Nicholas is the owner of this house."
30 ]
```

```
State your identity please: Masha
Aafreen is out right now, but you are welcome to the house Masha.
me: hi jordan
Jordan: What's up?
me: how are you ?
Jordan: I am on the Internet.
me: what do you eat?
Jordan: I consume RAM, and binary digits.
me: bye
Jordan: Good bye and have a blessed day!
```

```
Return yaml.load(data_file)
Training ai.yml: [#####] 100%
Training botprofile.yml: [#####] 100%
Training computers.yml: [#####] 100%
Training conversations.yml: [#####] 100%
Training emotion.yml: [#####] 100%
Training food.yml: [#####] 100%
Training gossip.yml: [#####] 100%
Training greetings.yml: [#####] 100%
Training health.yml: [#####] 100%
Training history.yml: [#####] 100%
Training humor.yml: [#####] 100%
Training literature.yml: [#####] 100%
Training money.yml: [#####] 100%
Training movies.yml: [#####] 100%
Training politics.yml: [#####] 100%
Training psychology.yml: [#####] 100%
Training science.yml: [#####] 100%
Training sports.yml: [#####] 100%
Training trivia.yml: [#####] 100%
State your identity please: meera
Your access is denied here.
```

---

To protect my personal information, only I will have access to my personal information. Once the bot has identified me, I trained the bot with some personal information about me

```
35 if identity == 'Aafreen':
36     city_born = [
37         "Where was I born?",
38         "Aafreen, you were born in Andamans."
39     ]
40
41     fav_book = [
42         "What is my favourite book?",
43         "That is easy. Your favourite book is The Hunger Games."
44     ]
45
46     fav_movie = [
47         "What is my favourite movie?",
48         "You have watched Inception more times than I can count."
49     ]
50
51     fav_sports = [
52         "What is my favourite sport?",
53         "You have always loved basketball."
54     ]
55     # train chatbot with your custom data
56     custom_train(home_bot, city_born)
57     custom_train(home_bot, fav_book)
58     custom_train(home_bot, fav_movie)
59     custom_train(home_bot, fav_sports)
60
```

```
State your identity please: Aafreen
List Trainer: [#####] 100%
List Trainer: [#####] 100%
List Trainer: [#####] 100%
List Trainer: [#####] 100%
State your identity please: Aafreen
Welcome, Aafreen. Happy to have you at home
me: who is the house owner
Jordan: Aafreen is the owner of this house.
me: what is my favourite sport
Jordan: You have always loved basketball.
me: bye
Jordan: Good bye and have a blessed day!
```

---

```
Hello, I am Jordan. How can I help you
me: what is my favourite movie?
Jordan: You have watched Inception more times than I can count.
me: 
```

## Limitations

Sometimes it can become difficult to work with the chatbot, and we have to set our expectations accordingly.

### Domain knowledge

A chatbot is a machine, and it has specific domain knowledge. We cannot expect the chatbot to know everything about everything. We are far from the AI we see in movies, so we need to have realistic expectations while designing a chatbot.

### Conversation boundaries

While conversing with a chatbot, you will initially get a lot of wrong answers since the chatbot is unable to comprehend your statements. This may get frustrating at times, but we need to understand that we are conversing with a machine, not a human being.

### Personality

A conversation with a computer is very different from a conversation with another human. We may expect the chatbot to have the following distinguishable human traits:

- Empathy
- Emotions
- Intelligence

---

We are far away from reaching a level of communication with AI that is indistinguishable from human communication, but we may achieve this sometime in the future.