



e-ISSN: 2319-8753 | p-ISSN: 2347-6710

# IJRSET

International Journal of Innovative Research in  
**SCIENCE | ENGINEERING | TECHNOLOGY**

# INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 11, Issue 12, December 2022

**ISSN** INTERNATIONAL  
STANDARD  
SERIAL  
NUMBER  
INDIA

Impact Factor: 8.118

 9940 572 462

 6381 907 438

 [ijirset@gmail.com](mailto:ijirset@gmail.com)

 [www.ijirset.com](http://www.ijirset.com)

# Real-Estate Chatbot

Tejas Mukhekar<sup>1</sup>, Adesh Gaikwad<sup>2</sup>, Swapnali Shahapure<sup>3</sup>, Shrikant Landge<sup>4</sup>, Yogendra Patil<sup>5</sup>

U.G. Students, Department of Computer Engineering, JSPM's Bhivrabai Sawant Institute of Technology and Research,  
Wagholi, Pune, Maharashtra, India<sup>1,2,3,4</sup>

Associate Professor, Department of Computer Engineering, JSPM's Bhivrabai Sawant Institute of Technology and  
Research, Wagholi, Pune, Maharashtra, India<sup>5</sup>

**ABSTRACT:** Intelligent Chatbot is a project that explores what can be accomplished with AI agents in the world we live in today. Alan Turing (1912-1954), known as the father of modern computing, developed the idea of artificial intelligence. Perhaps most famously known for breaking the Enigma code used by the Germans in WWII, which was widely regarded as unbreakable, he laid the foundations for the development of computer science and explored what is possible using electronic computers and artificial intelligence. In his 1950 paper on Computing Machinery and Intelligence, he asks the question; "Can machines think?". He created a test, with the fitting name of the Turing test, whereby a machine is tested on its ability to exhibit intelligence behaviour equivalent to, or indistinguishable from, that of a human. Throughout the paper, he delves deeper into this idea and I came across an interesting quote. To quote directly from Turing, "I believe that in about fifty years' time it will be possible to program computers, with a storage capacity of about 10<sup>9</sup>, to make them play the imitation game so well that an average interrogator will not have more than 70 percent chance of making the right identification after five minutes of questioning." (Turing, 1950). He wasn't too far off. In June 2014, a computer program called Eu-gene, which simulated a 13-year-old Ukrainian boy was said to have successfully passed the Turing test at an event held at Reading University's School of Systems Engineering. Some artificial intelligence experts refuse to recognize this as a legitimate victory but it is interesting to note how close Turing's prediction was (BBC tech, 2014) Messaging applications are the 1 most used applications in the world at the moment and some businesses are already taking advantage of this and developing chatbots of their own to complement their social media presence. With messaging applications taking up the majority of a user's time, it makes sense for businesses to capitalize on this. Bots are becoming smarter and faster and will soon become easier to use than a website or apps. A recent inquiry into the area of chatbots indicated that 180 bot-related companies have attracted \$24 billion in funding towards the development of AI-driven bot applications. (Gatti, Venturebeat, 2017) Microsoft CEO Satya Nadella was quoted saying "Bots are the new apps". (Cava, USA Today, 2016) With Microsoft set on exploring deeper into the world of chatbots and accelerating the innovation and sophistication of chatbots, I've found this project both interesting and exciting as I dived into Microsoft's newest platform; Microsoft Bot Framework.

**KEYWORDS:** Chatbot, Machine Learning, Classification, Segmentation, Algorithms, Framework, Artificial Intelligence.

## I. INTRODUCTION

Chatbot systems are automating a lot of customer care services and also companies, institutions, and organizations' websites. Users get a quick response to the questions which are more common and which are frequently asked. Here we have proposed a chatbot system for patients. Patients definitely may have lots of queries related to diseases, medicines, and other facilities. Instead of asking any random person, they can get a quick answer via this chatbot system. A chatbot is an AI agent that can participate in a conversation with a user. Most are equipped with a messenger-type interface with input from a user and output from the chatbot. The chatbot processes the user's input and outputs a reply based on what the user has just sent. It could be a greeting, a conversation topic, or even an image. Most basic chatbots work by matching a user's input with a predefined set of dialog.



## II. RELATED WORK

### 1. Paper name: Model of Multi-turn Dialogue in Emotional Chatbot

**Author:** Chien-Hao Kao, Chih-Chieh Chen.

**Abstract:** The intent recognition and natural language understanding of multi-turn dialogue are key for the commercialization of chatbots. Chatbots are mainly used for the processing of specific tasks and can introduce products to customers or solve related problems, thus saving human resources. Text sentiment recognition enables a chatbot to know the user's emotional state and select the best response, which is important in medical care. In this study, we combined the multiturn dialogue model and sentiment recognition model to develop a chatbot, that is designed for use in daily conversations rather than for specific tasks. Thus, the chatbot has the ability to provide the robot's emotions as feedback while talking with a user. Moreover, it can exhibit different emotional reactions based on the content of the user's conversation. data is imbalanced, and the dataset is generated by the TV series in which the actors may express strong emotional ups and downs to express the tension of the story.

### 2. Paper name: The Potential of Chatbots: Analysis of Chatbot Conversations

**Author:** Mubashra Akhtar, Julia Neidhardt.

**Abstract:** The idea of utilizing computers for question-answering tasks has been around since the early beginning of these systems. First algorithms with the aim to accomplish this was already implemented in the early 1960s. In recent years, chatbots have been gaining enormous popularity in various fields. In the context of business applications, they are considered useful tools for improving customer relationships. In this paper, chat conversations between customers and the chatbot of a telecommunication company are analyzed to find out if these interactions can be used to determine a) users' topics of interest and b) user satisfaction.

### 3. Paper name: Intelligent Chatbot for Easy Web-Analytics Insights

**Author:** Ramya Ravi

**Abstract:** In this fast-moving data-driven world, it is vital that we draw accurate insights to make the right decisions at the right time. In terms of online websites, there are many web analytics tools that will give us performance reports. However, it is tedious and time-consuming to master the tools leave alone derive insights to understand the business impacts. In this paper, I am comparing 2 widely used analytics tools based on their ease of use. In light of the same, I am proposing an Artificial Intelligence Machine Learning (AIML) driven chatbot, that is fuelled with analytics' raw data, that will enable bot-users to get business insights by just typing in the query. In this paper, I propose a chatbot that would enable bot users to just type in the query related to web analytics and will get a response immediately.

### 4. Paper name: Lead Engagement by Automated Real Estate Chatbot

**Author:** STho Quan, Trung Trinh.

**Abstract:** Accurate vessel segmentation in retinal images is vital for retinopathy diagnosis and analysis. However, the existence of very thin vessels in low image contrast along with pathological conditions (e.g., capillary dilation or microaneurysms) renders the segmentation task difficult. In this work, we present a novel approach for retinal vessel segmentation focusing on improving thin vessel segmentation. We develop a deep convolutional neural network (CNN), which exploits the specific characteristics of the input retinal data to use deep supervision, for improved segmentation accuracy. In particular, we use the average input retinal vessel width and match it with the layer-wise effective receptive fields (LERF) of the CNN to determine the location of the auxiliary supervision. This helps the network to pay more attention to thin vessels, that otherwise, the network would 'ignore' during training. We verify our method on three public retinal vessel segmentation datasets (DRIVE, CHASE DB1, and STARE), achieving better sensitivity (10.18 methods while maintaining comparable specificity, accuracy, and AUC. In [2,3], a complete chatbot system is introduced using an encoder-decoder neural network system for training data from past conversations. In [4], a system where NLU and DM are concurrently trained in a BiLSTM system. Individual components of a chatbot system are also addressed in various works.



### III. METHODOLOGY

#### 1. Motivation

Fast Chatbots potentially represent a new paradigm in how people will interact with data and services in the future. Currently, there is a lack of empirical investigations into why people use chatbots. This study provides needed insight into the motivational factors related to the use of conversational interfaces. Its results can guide future research on this topic, which may provide new insights and guide future design and development of chatbots.

#### 2. Objective

To create an intelligent AIML-based chat bot that can allow a human interacting with the bot to have an ongoing, interesting, and enriching conversation featuring looked-up information from Google.

Basic functionality – ability to respond to basic words/phrases

Advanced logic – be able to talk about different topics

Pull data from Google. E.g. What's the weather like etc, current news events

The bot should be able to pick topics to talk about rather than waiting on user input

#### 3. Assumptions and dependencies

Assumptions:

We have used Python Technique. Input as Text as a paragraph.

Dependencies:

We have used python libraries. Output to generate document summary.

#### 4. Functional Requirements

Functional Specification:

The application is user-friendly.

It provides an easy interface to the user.

The accessibility or response time of the application should be fast.

Dependency and Constraints:

End User application will be developed in Windows OS.

All scripts shall be written in Python.

The application design pattern shall be Singleton.

#### 5. Functional Interface Requirements

##### 6. User Interfaces:

Tkinter: Tkinter is Python's de-facto standard GUI (Graphical User Interface) package. Tools in Tkinter Window: It refers to a rectangular area somewhere on the user's display screen. Top-level window: A window that exists independently on the screen. It will be decorated with the standard frame and controls for the desktop manager. It can be moved around the desktop, and can usually be resized

*HARDWARE INTERFACES:*

System Processors: Core2Duo Speed: 2.4 GHz

Hard Disk: 150 GB

*SOFTWARE INTERFACES:*

Operating System: 64bit Windows 10 Coding Language: Python

Design Constraints: Spyder & PyCharm

#### 7. Non-Functional Requirements

*Performance Requirement:*

The performance of the functions and every module must be well.

The overall performance of the software will enable the users to work efficiently.

The performance of detect Depression levels should be fast.

The performance of the providing virtual environment should be fast.

*Safety Requirements:*



The application is designed in modules where errors can be detected and fixed easily. This makes it easier to install and update new functionality if required.

### 8. Software Quality Attributes

The software has many qualities and attributes that are given below:

*Adaptability:* This software is adaptable by all users.

*Availability:* This software is freely available to all users. The availability of the software is easy for everyone.

*Maintainability:* After the deployment of the project if any error occurs then it can be easily maintained by the software developer.

*Reliability:* The performance of the software is better which will increase the reliability of the Software.

*User Friendliness:* Since the software is a GUI application; the output generated is much user friendly in its behaviour.

*Integrity:* Integrity refers to the extent to which access to software or data by unauthorized persons can be controlled.

*Security:* Users are authenticated using many security phases so reliable security is provided.

*Testability:* The software will be tested considering all aspects.

## IV. ANALYSIS MODELS

The Waterfall Model is a step-by-step approach to software development. Each stage of the SDLC phase is intended to accomplish a specific goal. Winston Royce first presented it in 1970. This is how we will use it in our project. Because it is simple, straightforward, and uncomplicated, this paradigm is simple to understand and apply. It's simple to maintain because the model is tight, with clear deliverables and a review procedure for each phase. The waterfall paradigm works well for smaller projects with well-defined and well-known requirements.



Figure: 1 Waterfall Model

## V. SYSTEM DESIGN

### 1. System Design

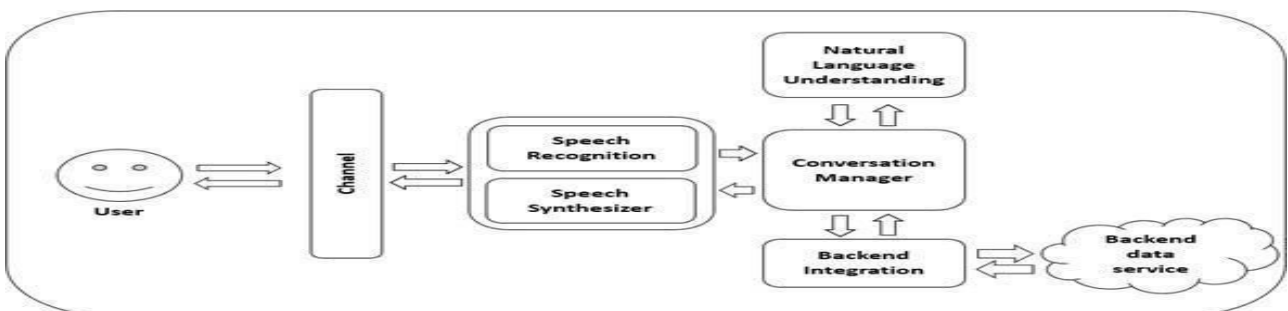


Figure: 2 System Architecture



1. Data Flow Diagrams

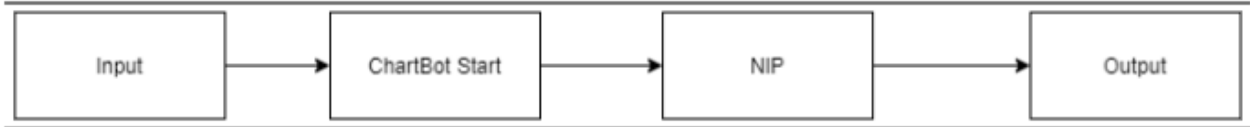


Figure: 3 DFD 0

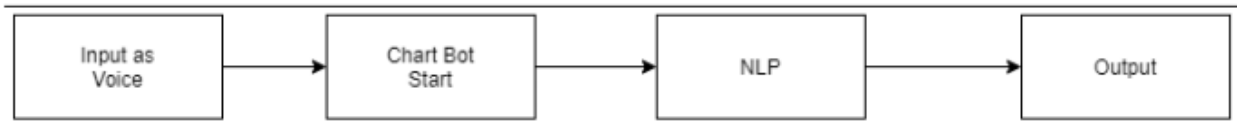


Figure: 4 DFD 1

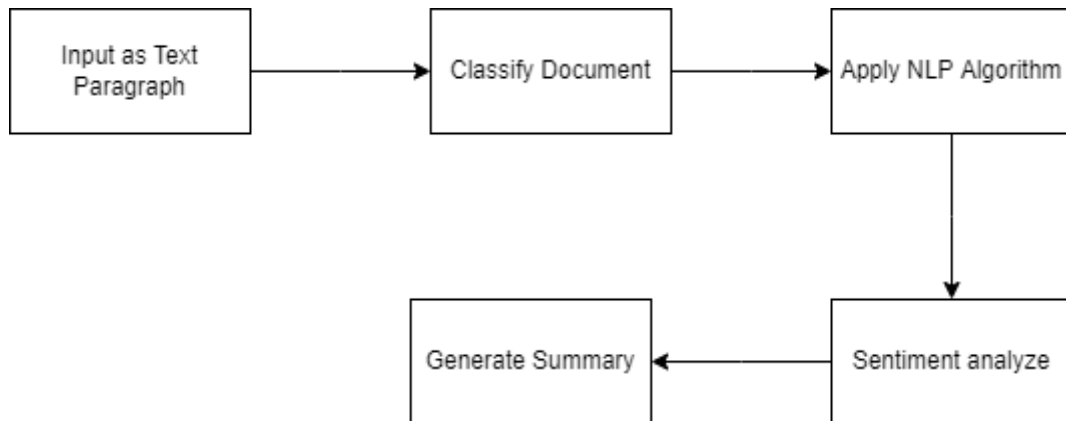


Figure: 5 DFD 2

2. UML Diagrams

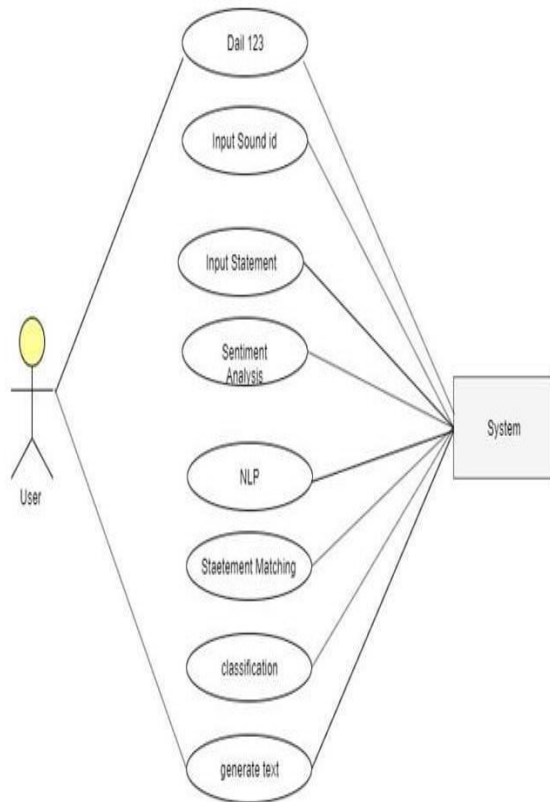


Figure: 6 UML Diagram

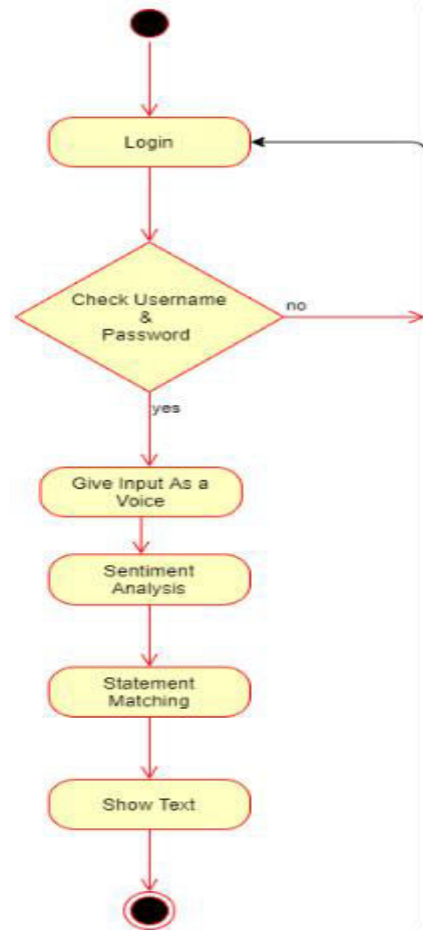


Figure: 7 Activity Diagram

The Unified Modelling Language (UML) is a programming language that is used to create software blueprints. The UML can be used to visualize, specify, build, and document software-intensive system artifacts. Although UML is process independent, it is best used in processes that are use case driven, architecture-centric, iterative, and incremental. There are a limited number of UML Diagrams available.

Use case diagram, Activity diagram, Sequence Diagram, and Class diagram.

## VI. CONCLUSION

The framework we create to make client benefits simple. As there we are attempting to make the framework simple to connect. There will be no compelling reason to press the catch to pick a choice just as no compelling reason to hang tight for an answer. Here we use the Speech Recognition module, Speech to content change module, and language Interpretation module. Chatting bot service provider acts as customer care for many organizations / institutions/industries etc. or they may act as personal assistant to all the people of the world. Bots developed on our site can also help to remember many things. It may also help in attracting customers nationwide for many companies. It can also be used to entertain people by sending them jokes, facts, quotes, etc. whenever they are bored. Top of all performance is the main concern while developing our project so that it can serve millions of customers at a single moment in time. After the best testing results and responses from the developed system proposed method came to the conclusion that the methodology is provenly successful.



#### REFERENCES

1. Augello A. Saccone G. Gaglio S. Pilato G., Humorist Bot: Bringing Computational Humour in a Chat-Bot System. Proceedings of the International Conference on “Complex, Intelligent and Software Intensive Systems (CISIS)”, 4-7 March 2018, Barcelona, Spain, pp.703- 708.
2. Gambino O. Augello A. Caronia A. Pilato G. Pirrone R. Gaglio S., Virtual conversation with a real talking head. Proceedings of the Conference on “Human System Interactions”, 25-27 May 2018, Kraow, Poland, pp. 263-268.
3. Vojtko J. Kacur J. Rozinaj G., The training of Slovak speech recognition system based on Sphinx 4 for GSM networks. Proceedings of International Symposium “EL, MAR (Electronics in Marine) focused on Mobile Multimedia”, 12-14 Sept. 2017, Zadar, Croatia, pp. 147-150.
4. Sun Microsystems, Developer resources for JAVA technology. [Online] <http://java.sun.com> (Accessed: 30 Oct. 2018)
5. The Apache Software Foundation, The Apache HTTP Server Project. [Online] <http://www.apache.org> (Accessed: 30 Oct. 2018)





**INNO SPACE**  
SJIF Scientific Journal Impact Factor  
**Impact Factor: 8.118**



**ISSN** INTERNATIONAL  
STANDARD  
SERIAL  
NUMBER  
INDIA



# INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

 **9940 572 462**  **6381 907 438**  **ijirset@gmail.com**



[www.ijirset.com](http://www.ijirset.com)

Scan to save the contact details