

Intelligent ChatBot System using Artificial Intelligence and Deep Learning

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ABSTRACT: The purpose of this paper is to showcase the facility of chatbots and the way they will be another to using an application or perhaps an internet site. The chatbots is straightforward to use, respond in an exceedingly timely fashion and be all round user friendly. The bots make the users interaction as easy and fast as possible to make sure that the users time isn't wasted which they get what they need with none difficulty or misunderstanding from the bot. The conversation flow and always keep the user on top of things of the conversation. Users should come faraway from their experience with the chatbot and think that it absolutely was a fun, easy to use and simple interaction that may encourage them to return back with none hesitation. With messaging platforms being the foremost used kind of application within the world, businesses are going to be looking to require advantage of this and begin to develop their own chatbots to figure together with their social media pages. Nowadays there's an lots of applications available and most users are going to be bored stiff of getting to download an application that they'll only use once or twice.

KEYWORDS: *Artificial Intelligence, chatbot, Android, AIML, Sentiment Analysis.*

1. INTRODUCTION:

A chatbot is a synthetic agent which will communicate with a user. Most are enables with a messenger interface with an input from a user and an output from the chatbot. most elementary chatbots work by matching an users input with a predefined set of dialog. as an example, a user saying "Thank you" will end in the chatbot saying "You're Welcome".

The predefined set of dialogs will be founded to imitate a traditional conversation between two people. Modern chatbots are more complex and have tongue processing which will learn from user inputs. they will access APIs to urge information users like news, weather, time etc. they will even process orders and make bookings entirely through a chatbot interface.

People often use terms like chatbot, virtual personal assistant, automation and AI exchangeably. But, there's a key difference between AI chatbots and just plain chatbots - to know the difference between AI and automatic. Drift's chatbots follow rules which are set in advance. In other words, they stick to the script, so that sales and marketing teams can answer the identical questions needed to sell to their customer. If you remember at our playbooks, you'll get a way of how this process works. Users begin the bot-building process by selecting the kind of conversation they'd prefer to founded .

Rule-based chatbots aren't programmed to retort to changes in language, rather they need a structured dialog that answers specific questions by matching the user input to programmed answers.

An AI chatbot is instruct to work more or less on its own, employing a process referred to as Natural Language Processing, or NLP, is combined with AI and therefore the annotation of human data. AI chatbots get smarter over time.

2. OBJECTIVE:

Main objective of this paper is to form an intelligent AIML based chatbot that may allow a person's

interacting with the bot to possess an ongoing, interesting and enriched conversation featuring searched information from Google. Another objective of this paper is we'll attempt to build a chatbot that may incorporate a standard sense database to supply simple but relevant responses while chatting. we'd like to successfully parse human input and find the foremost relevant keywords with some understanding of the context. Digital assistants work with human agents to produce user support. Chatbots are accustomed both market products and enable their purchases.

3. SYSTEM SPECIFICATIONS:-

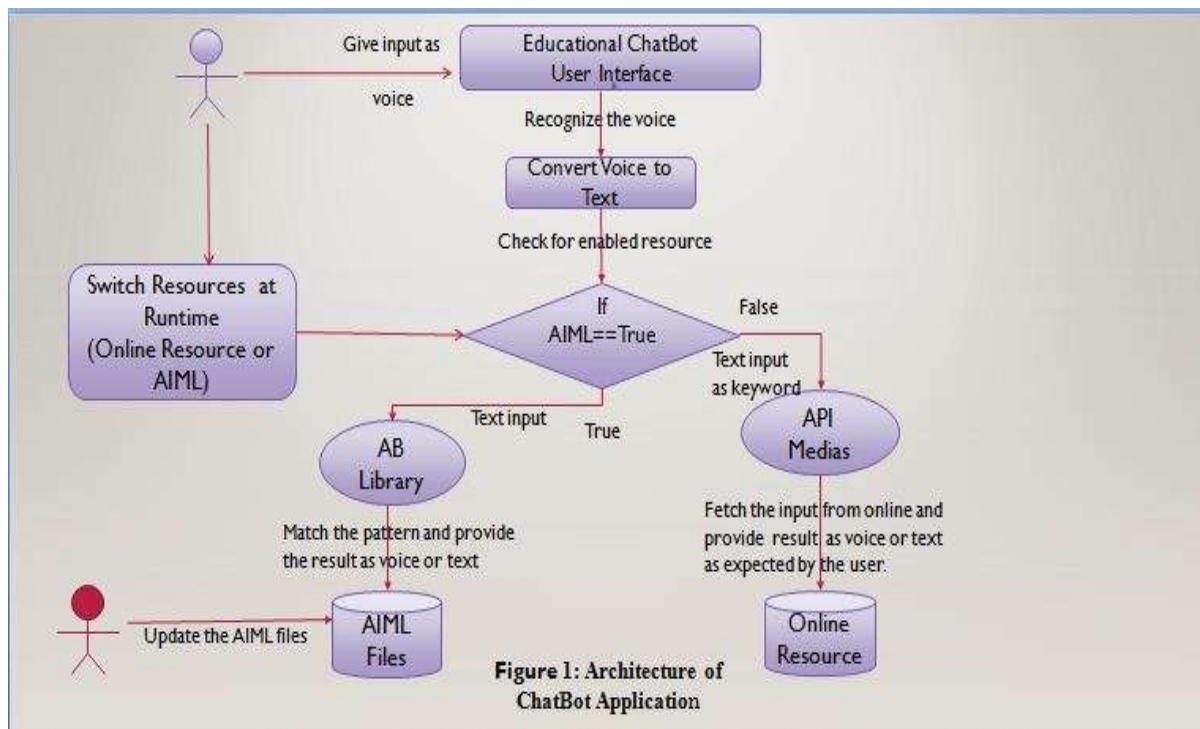
The system presented during this paper meets the following requirements.

- The client application is well accessible through the client browser.

4. Flowchart:

- A processing step, usually called activity, and denoted as a rectangular box
- A decision usually denoted as a diamond.

- All communications to and from the server is text and XML formatted.
- XML messages conform to a schema which describes the format.
- Communications with the server is recording equipment oriented and parses incoming XML messages seamlessly.
- The user is allowed to register and login to the system with authenticated, personalized and controlled communication with the server.
- The client applet provides the user two options: text input or voice input.
- The self-training AI module prevents a service bottleneck, and thus prevents modules from competing for resources.



5. Table -1: Literature Survey

Sr.No	Paper	Author	Year of Publication	Advantages	Disadvantages
1.	ChatBots in Education	Sefio Roos	2018	Gives personalized mentor experience and ans all relevant queries related to the student edu domain	Problem occurs while answering complicated and very typical queries.
2.	Artificial Intelligence and Chatbots in Technical Communication – A Primer	Ellis Pratt	2017	Suggests the idea of handling of the format of the written content by the ChatBot.	Content must be in structured format suitable for Machine Learning
3.	Chatbot Evaluation and Database Expansion via Crowdsourcing	Zhou Yu, Ziyu Xu, Alan W Black, Alexander I. Rudnicky	2016	As a dataset is created of appropriate responses to related queries, considerable level of accuracy is achieved.	A lot of overhead work has to be done for maintaining database.
4.	Survey on Chatbot Design Techniques in Speech Conversation Systems	Sameera A. Abdul-Kader Dr. John Woods	2015	Incorporation of Knowledge Bases for achieving high level of accuracy.	The same technology used that has been using since age-old.

6. ALGORITHM USED:-

Convolutional Neural Network:-

They are made of neurons that have learnable weights and biases.

Each neuron receives some inputs, performs a scalar product and optionally follows it with a non-linearity. The full network still expresses one differentiable score function: from the raw image pixels on one end to class scores at the opposite. and that they still have a loss function (e.g. SVM/Softmax) on the last (fully-connected) layer and every one the tips/tricks we developed for learning regular Neural Networks still apply.

Python Libraries used: -

1. TensorFlow
2. Matplotlib
3. Pandas
4. OpenCv
5. Nltk
6. SpeechRecognizer
7. Pyttsx3

7. PAPER SCOPE:-

This paper provides the applying to develop a chatbot which utilizes a database when interacting with a user

- It provides facility to know users. Analyze audience and study their habits, preferences, behavior.
- Users are given up to now information.

The objective of this application is to produce easy assistance to both visually impaired people furthermore because the normal people with proper database and knowledge

8. FUTURE SCOPE:

Chatbots are cited as virtual assistants. it is a reasonably computing software which can act as somebody's. The Chatbots is analyzed and improved. it's utilized in various fields like education, business, online chatting etc. it's utilized within the sector of education as a learning tool. the knowledge necessary for education is stored within the information base and will be retrieved any time by querying the bot. In business field, it's accustomed provide business solutions in an efficient way. When the solutions are efficient, the business is improved and thus the expansion of the organization are increased. This Chatbot is used in online chatting for entertainment purpose. People can chat with these bots online after they're bored for the aim of entertainment. Chatbots ends up in smart conversation and is advancing at an unprecedented rate with each new development

Features:-

- **Easy to Use and Reliable**
- **Convenient**
- **Navigation**

9. CONCLUSION:

Overall we feel that engaged on this paper provided us with an excellent learning experience. This has been our first major college paper that was completely by our group so it taught us plenty in terms of your time management and work load management. Favourite a part of this paper was engaged on a neighborhood of computing that's really getting down to grow and forced the lock the mainstream market. With such a lot of companies ancient board by creating their own chatbots, in a very few years we'll see it as an everyday thing. Regrettably, it feel that we did spend plenty of your time working with AIML before we moved on to Bot

Framework, We feel that if we had are working with Bot Framework from the beginning, We would've achieved plenty more. Within the future, we'll remember to be realistic with the goals and to explore every available choice to us before committing to at least one framework.

REFERENCES:

- [1]Boiano S, Borda A, Gaia G, Rossi S, Cuomo P "Chatbots and new audience opportunitiesfor Museums and Heritage Organisations." 2018
- [2]Litt S "The new Akron Art Museum chatbot, wants to get you talking about art and life." 25 August 2018
- [3]Mool T "Chatbot trends: the year of the voicebot, WhatsApp Bots, MaaP. NativeMSG" 13 Mar 2018
- [4]O'Mallon F "Museum of Australian Democracy uses facebook messenger chatbot to connect with Australia's past" 26 May 2017
- [5]Kory Becker "Building Voice-Enabled Apps with Alexa" January 2017
- [6]Wakefield J "Microsoft chatbot is taught to swear on Twitter" 24 Mar 2016.
- [7]Walter M "Object phone: the continued evolution of a little chatbot.." 4July 2016
- [8]Abu Shawar, B. and Atwell E "A chatbot as a novel corpus visualization tool" 2014
- [9]Michele L. McNeal, David Newyear "Streamlining Information Services Using Chatbots".2013
- [10]Torma N." Artificial Intelligence: Overview on Question Answering and Chatbots." 20 June2012
- [11]S. Lokman, and J. M. Zain "Extension and prerequisite: Analgorithm to enable relations between responses in chatbot technology" 2010
- [12]Wang Y." Designing Chatbot Interfaces for Language Learning:Ethnographic Research into Affect and User's Experiences" 17 March 2008
- [13] Bayan Aref Abu Shawar, " A Corpus Based Approach to Generalising a Chatbot System: Applying Simple Natural Language Processing Techniques to

Build Knowledge Base of ALICE Chatbot System”
April 2005

[14]Heller B, Procter M, Mah D, Jewell L, Cheung B.
“Freudbot: An Investigation of Chatbot Technology in
distance education” 22 Oct 2005

[15]Gibbs, G.R., Cameron, C., Kemenade, R., Teal, A.
and Phillips, D “Using a chatbot conversation to
enhance the learning of social theory.” 2004