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## Survey on Artificially Intelligent used in ChatBot

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**ABSTRACT:** Artificial intelligence ChatBot is a technology that makes interactions between man and machines in their natural language. The main goal of the ChatBot is to make a conversation between student and machine. The machine has embedded knowledge to identify the sentences and make a decision as a response to a question. The response is matched with the input sentence from the user. The ChatBot consists of core and interface. The knowledge of ChatBot is stored in the form of AIML (Artificial Intelligence Markup Language) programs. A human user can ask to the systems like they usually do to another human. This application work is very simple because the knowledge is already known in advance.

**KEYWORDS:** Artificial intelligence, Artificial Intelligence Markup Language, chatbot.

### I. INTRODUCTION

The ChatBot matches the input sentence from the user with the pattern that is already present in the knowledge base (KB). Each pattern is paired with the knowledge base of the ChatBot whose primary source is AIML templates designed to solve queries related to college. The data which has been modelled on the pattern of the conversation would be tested using a series of scenarios. The results from the ChatBot would be crosschecked with the basic pattern defined in AIML files. This is done to add some knowledge to the database because it hasn't been modelled before. So if the input sentences don't match in the knowledge base then it will be remodelled.

ChatBot will give solutions for user queries and problems. In this paper, a ChatBot is designed to answer both general questions and FAQs. AIML is an Artificially Intelligent Markup Language [1]. The AIML template is defined with almost all the general queries like hii, hello, how are you? Etc. It is used to deal with general questions and greetings. AIML is a simple language, which can also give random responses for single query or scripts.

### II. MOTIVATION

The success of search engines has shown that users are particularly interested in accessing specific information in accordance with their short or long term goals. Google, Yahoo, Bing and other Search engines use complex algorithms to return documents and web pages which may or may not contain the answer to a user's search query.

This system can be improved by creating ChatBot Interface that can interact with the user to reduce their search. This application will enable a natural dialogue between the system and the user.

### III. EXISTING SYSTEMS

1. ELIZA - The origins of chatbots can be traced back to as early as the 1960's when Joseph Weizenbaum developed his ELIZA program[3]. ELIZA simulates a Rogerian psychologist and is capable of carrying on a conversation. ELIZA works according to a very simple principle. Pattern Matching and substitution process are used to process the input received and translate it into a suitable output. ELIZA often applies two or more substitutions to the user input, the first one consists of swapping all instances of my to your, and I'm to you are. Subsequent substitutions match and replace



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other patterns in the input.

ELIZA gives the impression of intelligence by repeatedly applying this read-substitute-print loop. Although ELIZA[4] was written between 1964 and 1966 and can be considered somewhat out-dated, chatbots of the current time operate using the same principles.

2. ALICE (Artificial Linguistic Internet Computer Entity) Bot - ALICE is a chatbot developed initially by Richard Wallace[4]. It is inspired by ELIZA and uses an XML (Extensible Markup Language) Schema called AIML for specifying the pattern/response pairs. The first edition of ALICE was implemented in 1995 in SETL (SET Language) but was migrated to Java in 1998. After that, more and more people started contributing to it and in January 2000 ALICE became first in the Loebner contest. Later the ALICE/AIML engine was also ported to C/C++, PHP (Hypertext Preprocessor) and several other languages contributing to the popularity of ALICE and AIML. In May 2002 the website [www.pandorabots.com](http://www.pandorabots.com) came online allowing internet users to develop and host their own chatbots based upon AIML for free. It currently hosts more than 206 chatbots.

3. Google Assistant (Allo) - Google Allo includes the Google Assistant, an intelligent personal assistant allowing users to ask questions and receive answers in a two-way conversational nature [5]. Allo incorporates a "smart reply" feature that generates automatic reply suggestions for users to send instead of typing. An update released in March 2017 allows users to send various forms of files, including PDFs, documents, APKs, Zip archives, and MP3 audio track. Unlike many other chat clients; Allo is only available for iOS and android. Allo does not contain a web client and any tablet applications. This puts Allo into a particularly tricky situation. Allo has all of the drawbacks of a single device SMS client AND the drawbacks of an IM client that does not handle SMS[5]. Google even went a few steps further by including an almost totally useless SMS feature that allows you to send SMS from it, however, it isn't an SMS client... Confused? Your recipients will be confused since it sends a message from a random unknown 5-digit number. But it still gets worse.

It does not use your number or Google account to sync anything, even the basics like your name and profile picture and let's not get started in that "ALL YOUR CONVERSATIONS ARE LOST" when you switch devices. Your Google account is only used to make Assistant suggestions for you. Your Google account doesn't matter in any other area of the app.

## IV. LIMITATION OF EXISTING SYSTEMS

- *Access, Hardware, and Bandwidth:* A common limitation in all technological advances applied to education, such as ChatBot software, is a lack of the physical hardware necessary to run such a program.
- *Dialects, Speech Recognition, and Question Formation:* The English language has a multitude of dialects which can hinder the chatterbot, due to varying sentence structures in other languages; a user may face difficulty.
- *Humour and Sarcasm:* A chatterbot cannot recognize humour and sarcasm unless specifically programmed to do so.

## V. RESEARCH AREA

The ChatBot can be classified into three classes

1. Bots that look around for information
2. Bots that look around for information to complete a specific task
3. Bots with social abilities and tasks such as bots can be called as social bots or chatbots

The first two are easy to build and structure is indeed available easily, but third class of chatbot is difficult to build. Such bots can be classified into master bots and follower bots. Master bots are universal bots which is centralized player which will be used as gateway for peripheral interface and application so in this bot two-level degree of complexity can be given on is deep learning and other is speech recognition. So deep learning models for speech recognition as either retrieval based model or generative model can be used. Machine translation is still in research stage. Google has recently created a neural machine translation one such translation as such. Second speech recognition is still under supervision, to make chatbot more interactive we need unsupervised learning process.



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Furthermore, there are many nuances of human speech recognition which we are not able to fully embed into a machine yet. MetaMind is doing a great work in the space and it recently introduced Joint Many-Tasks (JMT) and the Dynamic Coattention Network (DCN), respectively an end-to-end trainable model which allows collaboration between different layers and a network that reads through documents having an internal representation of the documents conditioned on the question that it is trying to answer. Finally, the automatic speech recognition (ASR) engines created so far were either lacking personality or completely missing the spatiotemporal context. These are two essential aspects for a general CUI, and only a few works have been tried up to date.

## VII. CONCLUSION

It is an exciting time to be working on deep learning for speech recognition. Not only the research community but the market as well are quickly recognizing the importance of the field as an essential step to the development of an AGI. The current state of ASR and bots reflect very well the distinction between narrow AI and general intelligence, and we should carefully manage the expectations of both investors and customers

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