

Intelligent Knowledge Base Conversation

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Abstract - In this paper we have proposed an application called CHATTER BOT. Chat bot can be online based or desktop based but we are going to develop application Intelligent Knowledge Based Conversation (I-KBC) which is desktop based. Chat bots are simple to use, in which you "chat" textually with the bot over a computer screen. The bot usually introduces itself. You respond with a statement or question. The bot consults its knowledge base or programming language and replies. The conversation continues as long as it is interesting or useful for the human. There are hundreds of different bots, developed for a variety of reasons; they range from hardwired programs with simply coded patterns to systems built upon embedded learning algorithms that continuously expand their language knowledge base. The I-KBC is based on programming language AIML which is used to store the bot's knowledge and profile.

Keywords— Chatting, web search, save chat, load chat, speech synthesis, .NET Framework, C#, AIML.

I. INTRODUCTION

Chat bots are simple to use, in which you "chat" textually with the bot over a computer screen. The bot usually introduces itself. You respond with a statement or question. The bot consults its knowledge base or programming language and replies. The conversation continues as long as it is interesting or useful for the human. There are hundreds of different bots, developed for a variety of reasons; they range from hardwired programs with simply coded patterns to systems built upon embedded learning algorithms that continuously expand their language knowledge base. Bots are created purely for fun or as part of interactive games, Internet information services, web site guides, ecommerce agents and more. Many bots are designed to provide specific information and direct the dialogue to specific topics. Our i-KBC abbreviation for (intelligent) Knowledge Based Conversation, tries to integrate the concepts of learning and emotions to a Chat bot system incorporating Spoken Language Systems to address some of the inefficiencies found in these. For example, most chat bots have no capability of learning from conversations and maintaining its emotions in reaction to every previous scenario. These concepts are important, according to our vision, because the main goal of a bot should be to mimic real human conversations. More or less, we visualize this character (the Hyperbot) as a personalization of someone who has some knowledge about some things but is constantly learning everything that is said to it. We can see this as a kid who doesn't know enough but with time his/her knowledge will expand and future conversations with that kid will hopefully be more solid.

II. EXISTING SYSTEM

Most modern AI research focuses on practical engineering tasks. This is known as weak AI and is distinguished from strong AI, which would require sapience and reasoning abilities. One pertinent field of AI research is natural language. Usually weak AI fields employ specialized software or programming languages created for them. For example, one of the 'most-human' natural

language chatter bots, A.L.I.C.E., uses a programming language called AIML that is specific to its program, and its various clones, named Alice bots. Nevertheless, A.L.I.C.E. is still based on pattern matching without any reasoning [6]. This is the same technique ELIZA, the first chatter bot, was using back in 1966. Another notable program, known as Jabberwocky, may be a little closer to strong AI, as it is claimed to learn new responses based on user interactions, rather than being driven from a static database like many other existing chatter bots. Although such programs show initial promise, many of the existing results in trying to tackle the problem of natural language still appear fairly poor, and it seems reasonable to state that there is currently no general purpose conversational artificial intelligence. This has led some software developers to focus more on the practical aspect of chatter bot technology - information retrieval.

III. PROPOSED METHODOLOGY

Our i-KBC abbreviation for Intelligent knowledge based conversation is especially designed to answer queries related to our college system [3]. The basic idea behind designing bot with college database is that any outsider can ask our bot rather than keeping a person on the bench to answer. For example, if the outsider wants to know “Where is the Principal’s Office?”, our bot would answer that and hence we don’t need any human being sitting on bench for this purpose. Modules used in our systems are:

A. Hyperbot Interface

- The Hyperbot interface will be created in Macromedia Flash 8. The interface will be programmed using Action Script 2.0 in Flash.
- It provides two-way communication with the back-end modules.
- Moreover, flash allows us the create animated interfaces with many other features that separates them from the normal interfaces created in VB or any other application programming software.
- The interface will have menu options & will be equipped with a 2-D bot with lip synchronization features.
- It will also be equipped with a user friendly chat window allowing the users to chat, save & load the earlier chats.
- Each window will be provided with an instant help & notes section.
- The interface will also contain a diary in which user can write reminders which the bot will make sure that it reminds the user whenever it’s loaded.

B. Learning module

- The learning module will give the bot the capability of learning new facts & expanding its knowledge base [6].
- AIML is used to maintain the bot’s knowledge & profile [5].
- The quality of the response of the bot can be improved by teaching it regularly.
- The user can teach the bot new queries & responses as well as just change the existing responses for the query if the user is not satisfied with the response.
- The responses for the queries, which are searched on web, are stored in the AIML file for later use.

C. Lip-sync module

- The lip sync module will be created in Flash using Action Script.
- Given a sequence of input string, this module will perform a sequence of lip movements.

- The various lip movements for various phonemes will be defined in the flash movie.
- The lip sync module will give an interactive feel to the interface.

D. Speech synthesis module [2]

- Speech synthesis will be done using speech libraries in C#.
- Lip movements & the speech will be matched by adjusting the various audio parameters in C# such as speech rate.

E. Search On Web

- This module will harness the capabilities of powerful search engines.
- It performs concurrent searching for extra links & images to support the answer.
- It provides explicit responses to web related queries.
- Makes use of SOAP API architecture to extract links.

F. AIML Module [5]

- It is used to store the bot's knowledge & profile.
- AIML object is a well formed as defined to the XML specification and valid according to AIML specification.
- AIML contains various elements. The most important of these are categories, patterns & template.

Category: Categories are a fundamental unit of knowledge. It contains at least two further elements viz. pattern & template.

Pattern: A string of characters intended to match one or more user inputs.

Template: Specifies the response to a matched pattern.

G. Database Design:

Storage of various data & facts is implemented using two types of media.

- Knowledge base for bots learning space.
- XML flat files for saving images, text & chat-relevant data.

IV. RESULT

In the following chapter results of final product is shown module wise. Graphical User Interface of each step is displayed with description.

Graphical User Interface

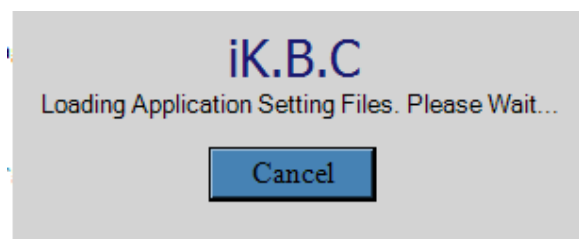


Fig.1 Splash Screen

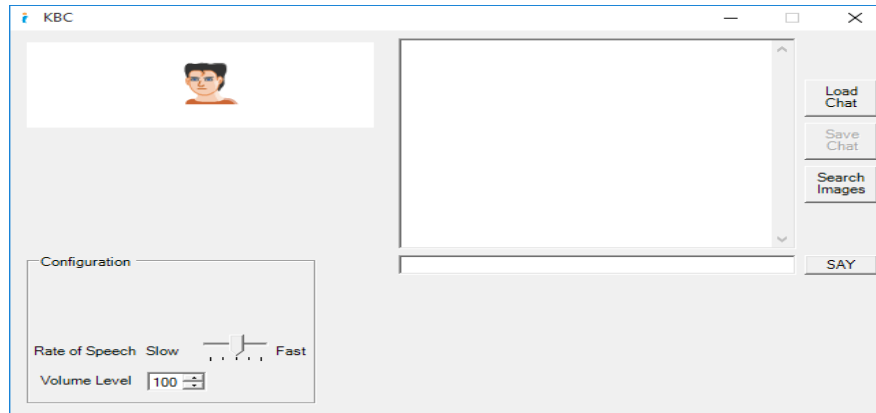


Fig.2a I-KBC Interface

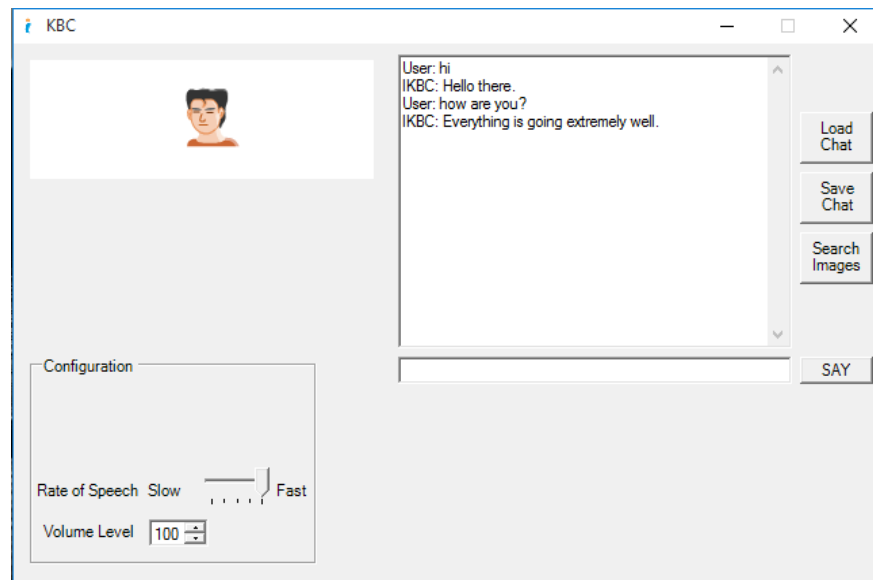


Fig.2b I-KBC Interface

V. ADVANTAGES

Ranging from the fields of education to entertainment, from interesting gossips to work-related information, from airline-reservations to comprehending quantum mechanics, Hyper bots have considerable potential in various vital arenas involving communication and sharing of information in an efficient manner.

A. E-Learning

The most significant applications our project targets are based on e-learning and dissipation of knowledge to masses through e-tutors. Hyper bots can act as a guide and virtual tutor to a course, they can run tests and quizzes, and just make learning fun. Children in particular really enjoy interacting with chat bots so we see some great opportunities in school CBSE, ICSE and SSC level material. It does not only enhance their knowledge about the concerned topic but also helps in abstracting the hard-work behind it making the experience much more enthralling and enjoyable.

B. Other Education:

Other potential areas are in adult education - especially for those who are new to computers, and in English language teaching in TEFL, ESOL and TESL type environments. Leading e-learning consultants also agree to the fact that "character-based simulations are emerging as a key tool and approach to high impact e-learning".

VI. CONCLUSION

This application will help the user to find the query related to our collage system. A user can communicate via auditory or textual method even a physically challenged person can also take the advantage of this system.

VII. FUTURE SCOPE

An I-KBC can also be designed for customer service, product sales, site guides, information gathering, survey taking, or something else. These are generally more goal-oriented bots that may try to accomplish something with each chat, whether that be guiding someone through your web site, giving them information, selling items, or gathering information. It is used to engage customers in the same conversational manner as would a human sales or support person. Throughout the discussion a customer can be guided, as well as consulted; consequently, the smart bot can display the appropriate Web page, answer the questions, and even make specific recommendations.

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