

College Information Chat Bot System

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Abstract-User interfaces for software applications can come in a variety of formats, ranging from command-line, graphical, web application, and even voice. While the most popular user interfaces include graphical and web-based applications, occasionally the need arises for an alternative interface. Whether due to multi-threaded complexity, concurrent connectivity, or details surrounding execution of the service, a chat bot based interface may suit the need.

Chat bots typically provide a text-based user interface, allowing the user to type commands and receive text as well as text to speech response. Chat bots are usually a stateful services, remembering previous commands (and perhaps even conversation) in order to provide functionality. When chat bot technology is integrated with popular web services it can be utilized securely by an even larger audience

1. Introduction

A CHATBOT is an artificial person, animal or other creature which holds conversations with humans. This could be a text based (typed) conversation, a spoken conversation or even a non-verbal conversation. Chat bot can run on local computers and phones, though most of the time it is accessed through the internet. Chat bot is typically perceived as engaging software entity which humans can talk to. It can be interesting, inspiring and intriguing. It appears everywhere, from old ancient HTML pages to modern advanced social networking

websites, and from standard computers to fashionable smart mobile devices. Chat bots talk in almost every major language. Their language (Natural Language Processing, NLP) skills vary from extremely poor to

very clever intelligent, helpful and funny. The same counts for their graphic design, sometimes it feels like a cartoonish character drawn by a child, and on the other hand there are photo-realistic 3D animated characters available, which are hard to distinguish from humans. And they are all referred to as “chat bots”.

Modules and their Description

The system comprises of 3 modules as follows:

- Admin Login**
- Bot Chat**
- Text to Speech**

Description: -

Admin Login:

User has to login to the system to access various helping pages through which user can ask queries to the system with the help of bot.

Bot Chat:

User can chat with the bot it implies as if enquiring to the college person about college related activities.

Text to Speech:

The bot also speaks out the answer.

2. Review of Literature

Existing System

1. Emanuela Haller and Traian Rebedea, “**Designing a Chat-bot that Simulates an Historical Figure**”, IEEE Conference Publications, July 2013.

There are many applications that are incorporating a human appearance and intending to simulate human dialog, but in most of the cases the knowledge of the conversational bot is stored in a database created by a human experts. However, very few researches have investigated the idea of creating a chat-bot with an artificial character and personality starting from web pages or plain text about a certain person. This paper describes an approach to the idea of identifying the most important facts in texts describing the life (including the personality) of an historical figure for building a conversational agent that could be used in middle-school CSCL scenarios.

2. Maja Pantic, Reinier Zwitserloot, and Robbert Jan Grootjans, “**Teaching Introductory Artificial Intelligence Using A simple Agent Framework**”, IEEE Transactions On Education, Vol. 48, No. 3, August 2005.

This paper describes a flexible method of teaching introductory artificial intelligence (AI) using a novel, Java-implemented, simple agent framework developed specifically for the purposes of this course. Although numerous agent frameworks have been proposed in the vast body of literature, none of these available frameworks proved to be simple enough to be used by first-year students of computer science. Hence, the authors set out to create a novel framework that would be suitable for the aims of the course, for the level of computing skills of the intended group of students, and for the size of this group of students. The content of the

introductory AI course in question is a set of assignments that requires the students to use intelligent agents and other AI techniques to monitor, filter, and retrieve relevant information from the World Wide Web. It represents, therefore, a synthesis of the traditional objectivist approach and a real-world-oriented, constructivist approach to teaching programming to novices. The main aim of implementing such a pedagogy was to engage the students in learning to which they personally relate while attaining intellectual rigor. Classroom experience indicates that students learn more effectively when the traditional objectivist approach is combined with a constructivist approach than when this orthodox approach to teaching programming to novices is used alone.

Problem with current scenario

- Traditionally, the chat bot system is not known to people who are not more into the technology.
- Even if there exist a chat bot system, it is not much accurate in proving the answer or solutions.
- Students need to manually visit to the college to get their queries answered by the college help desk.
- This process consumes lot of time as well as money as the customer needed to visit college if its miles away from home.
- Also, this process may lead to communication gap between student and college.

3. Educational Requirements

The Project is developed using Php as a language. We used Notepad++ for Design and coding of project. Created and maintained all databases into My SQL 5.6, in that we create tables, write query for store data or record of project. Managed database using WAMP server.

Hardware Requirement:

- i3 Processor Based Computer
- 4GB-Ram
- 320GB Hard Disk
- Monitor

Software Requirement:

- Windows 7
- WAMP Server
- Notepad++
- My SQL 5.6

4. Proposed System

A Student bot project is built using artificial algorithms that analyzes user's queries and understand user's message.

This System is a web application which provides answer to the query of the student.

Students just have to query through the bot which is used for chatting.

Students can chat using any format there is no specific format the user has to follow.

The System uses built in artificial intelligence to answer the query.

The answers are appropriate what the user queries.

If the answer found to invalid, user just need to select the invalid answer button which will notify the admin about the incorrect answer.

Admin can view invalid answer through portal via login

System allows admin to delete the invalid answer or to add a specific answer of that equivalent question.

The User can query any college related activities through the system.

The user does not have to personally go to the college for enquiry.

The System analyzes the question and then answers to the user.

The system answers to the query as if it is answered by the person.

With the help of artificial intelligence, the system answers the query asked by the students.

The system replies using an effective Graphical user interface which implies that as if a real person is talking to the user.

The user can query about the college related activities through online with the help of this web application.

This system helps the student to be updated about the college activities.

5. System Framework

(A) System Design

Systems design is the process of defining the architecture, components, modules, interfaces, and data for a system to satisfy specified requirements. Systems design could be seen as the application of systems theory to product development. There is some overlap with the disciplines of systems analysis, systems architecture and systems engineering.

Principles of Chat Bot Design

1. Don't pretend to be a human

Playing bait-and-switch with a user can make them feel that they have been duped, or that they don't understand how a system works; both are bad user experiences. Don't pull the rug out from under your users. This means not using "is-typing" indicators or artificial delays to make it seem more human. On the contrary, bot messages should be styled differently and be clearly labeled in a way that communicates they are not human. This doesn't preclude us from giving the bot personality.

2. Keep it incredibly simple

Bot conversations should be bounded to very particular subjects and follow linear conversation routes; we avoid complicated branching paths. We're not trying to create a general, self-aware A.I. here. It's okay to expose and explain limitations. BASAAP. Individual bot designers shouldn't have to account for tricky failure cases. Users will tire of complicated passages of dialogue.

3. Respect the chat medium

One advantage of smart messaging apps is that we can strip away a lot of apps and interface and reduce the interaction to a simple chat UI.

It would therefore be pointless to turn around and drop an entire app directly into a conversation. Keep everything native to the conversational back-and-forth. Every bot interaction is about call and response, with the bot publishing comments into the chat thread and the end user responding in the reply area. Bots can't modify conversations in ways that humans can. At the same time, make use of conventions: rather than printing out an ungainly URL in a bot response, show a nicely-formatted card previewing the linked page.

4. Optimise for the end user

Bots should be used to improve the end user experience, not just to make life easier for customer support teams. A designer should ask themselves: would a human be better for the end user? If the answer is yes, you shouldn't be using a bot. Bots should not attempt to replace what humans are good at; rather they should attempt to improve what humans are slow at. Machines should work; people should think.

5. Use sparingly

Bot interactions should be short and precise. It should be impossible to get into a protracted back and forth conversation with a bot; anything above two inputs feels laborious.

(B) System Architecture

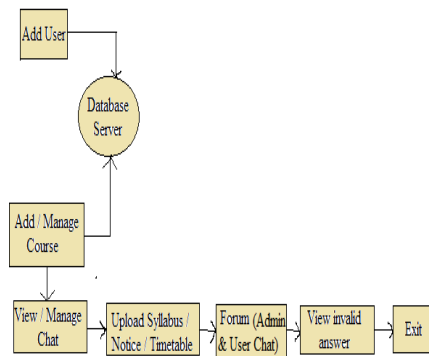


Fig. System Architecture for College Information Chat Bot

According to the architectural diagram of College Information Chat Bot System, there are 7 modules which are explained as follows accordingly.

1. Add User – This module is responsible for adding user to the system. Each user is assigned a unique id and password to get access into the system for its utilization.
2. Database Server – It keeps record of all the users login credentials, college data, user queries, etc.
3. Manage Course – In this module the admin performs the various tasks to fetch into the database various college information requirements like placement sheet, dept info, timetable, general notices, etc. All this fetched information are then retrieved as a response to the user query accordingly. Admin only has the authority to manage course details.
4. View/Edit Chat – In this, User types the query and the bot replies to the user query accordingly. Actual Chating occurs in this phase only.
5. Upload – In this section admin uploads the common/ general notices like time schedule, exam dates, fee structures, event and seminar notices, etc which user may query out during chatng phase.
6. Forum – In this, if the user founds that answer does not satisfy or make any sense to his query then he can mark that answer as invalid. This invalid answer is later viewed by the admin. Admin then studies that invalid answer and then decides whether to work upon it or just ignore.
7. Exit – This is the phase where user after finishing his work sign out from the system

(C) Algorithm

Chat Bot Algorithm which is been utilized in this project has been developed by Michael Maudlin in 1994 and was first published in the book Julia. He had developed this algorithm for the creation of verbot which was first AI based Chatterbot.

- So when user submits its Question, we store that in a variable "query"
 - After that we bring all the main keywords from question table of the database.
 - and check if "query" contains any of the main keywords in it.
 - If No then we say no answer found.
 - If Yes then we bring all sub-keyword with its answer of that matching Main-keyword.
 - then we pass "query" through 4 keyword check procedure ** 4 Keyword check is checking all the 4 sub-keywords are in "query"
- ```
Code : if(strpos($query,$k1) !== false && strpos($query,$k2) !== false && strpos($query,$k3) !== false && strpos($query,$k4) !== false)
```
- If any of the entry matches the keyword then we take its answer and then submit it to the user.
  - If it does not match then we pass "query" through 3-keyword match algo.

- If it and so on for 2 and 1 keyword match.
- And if we still don't get the output we say No Answer Found.

## 6. Conclusion

The main objectives of the project were to develop an algorithm that will be used to identify answers related to user submitted questions. To develop a database where all the related data will be stored and to develop a web interface. The web interface developed had two parts, one for simple users and one for the administrator.

A background research took place, which included an overview of the conversation procedure and any relevant chat bots available. A database was developed, which stores information about questions, answers, keywords, logs and feedback messages. A usable system was designed, developed and deployed to the web server on two occasions. An evaluation took place from data collected by potential students of the University. Also after received feedback from the first deployment, extra requirements were introduced and implemented

### Advantages of Project

1. User does not have to go personally to college office for the enquiry.
2. This application enables the students to be updated with college cultural activities.
3. This application saves time for the student as well as teaching and non-teaching staffs.

### Disadvantage

It requires active internet connection else error may occur.

### Application

Enhance AI Based this Chat Bot System can be used in many colleges around the country and it can be used in various firms.

### REFERENCES:

1. Emanuela Haller and Traian Rebedea, “**Designing a Chat-bot that Simulates an Historical Figure**”, IEEE Conference Publications, July 2013.
2. Maja Pantic, Reinier Zwitserloot, and Robbert Jan Grootjans, “**Teaching Introductory Artificial Intelligence Using A simple Agent Framework**”, IEEE Transactions On Education, Vol. 48, No. 3, August 2005.

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