A Survey on Intelligent student career guide Chat Bot

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ABSTRACT: Chat bots are programs which creates an intelligent human conversational environment. This paper will describe current efforts in the development of an intelligent Student guidance bot. Student guidance project is built using artificial intelligence algorithms that are used for analysing user's queries and understands user's messages. It provides valid result for the queries which was given by the End users. The students need not need a personal counsellor for choosing their careers for future jobs. The system analyses the questions that are posted by the users and then answers to the queries accordingly, as it is answered by the student guide.

KEYWORDS: Chat bots, Knowledge base, Text to speech.

I.   INTRODUCTION

The chat bots are intelligent program that describes the human–machine conversations and provides appropriate answers like a real human. The chatbot consist of three parts as follows. The first part is typed or spoken input from the end users in natural language. The second part is typed or spoken output from the chatbot and the third part of chatbot is processing of the inputs that are given by end user to the chatbot using knowledge bases. The proceesing part provides appropriate output to the end user which is understandable to the users. The entire process repeats continuously until the conversation comes to an end.

The student career guide bot is an application designed especially for the students to guide them in choosing the right career for the future. The bot provides list of courses and future jobs based on the student's interest and hobbies. The user does not need to follow any format for asking questions to the chat bot. The chat bot uses Natural Language processing (NLP) technic is used to provide the appropriate output to the users. The NLP is used to provide an effective communication among the users and make the end user feel that they are having a human to human conversation.

II.   LITERATURE SURVEY

The chatterbot is used to provide an effective conversation between the human and a machine. The machine consist of embedded knowledge to identify the sentences and can make decision by itself without any human supervisor to answer the queries asked by the end users. The sentence similarities calculation in a given input can be done using bigram. The bigram splits the input into two letters of input sentence. The knowledge of the chat bot is stored in a database for further use. The RDBMS is used to store the data's and manage it in an effective way. The Chat bot consist of a user interface for getting input and displaying output. The SQL has been used for pattern matching and knowledge storing in the database [1].

The hybrid deep neural network(DNN) and Hidden Markova Model(HMM) can be used to improve speech recognition performance. The DNN technique is more efficient and reliable than any other technique used in for speech recognition. The conventional neural networks (CNN) is used in speech recognition in such a way that CNN's structure

directly accommodates some types of speech variation CNN reduces the error bit by 6% to 10%, so it is efficient in improving speech recognition [2].

The career counselling chatbot uses the following algorithm
- Firstly, the system will take input from the end user in text or speech format.
- If the input is in the voice format then it will be converted to the text format and this format will be taken for further purpose.
- Process the queries which are received using the response generation module which uses data repository for processing the data.
- Search in Database for the appropriate answer.
- Finally, display the result in Speech and Text format to the end user [3].

2.1Creating Rule:

Creating Rules in Verbot 4.0 is simple and faster. Rules are the important aspect of verbot because it contains the knowledge of the Verbot. A Rule consists of both Inputs and Outputs. An Input is used to match to what the end users types. Once an Input finds a match the appropriate Output or Response is displayed to the user.

For creating a Rule give a name for the rule. Type the desired rule in the Rule Name labelled input box. For example consider "Computer" is a rule to be added. Type "Computer" and once "Computer" is typed in rule box, click the New Rule to create a new Primary Rule.

2.1.1Adding an Input to your Rule
Now we have just created a Rule. We need to add an input or two to make it available for the end users of Verbot player. An Input can be made up of single or multiple words. For the instance, we simply want the Verbot to respond to a user messages "Welcome".
To create an Input press on the Add button in the input text box. Then type "Welcome" and click ok. You can add many inputs as required. Now we have finished adding our inputs and it's time to create an Output for it.
To create an Output press the Add button in the output text box. A box appears with two fields. The first field is used for Output. The second field is used for holding extra commands.
Enter "Thank you" within the top field and click the "Ok" button. The Output has been added. Finally we have created our first Rule.
Now save your Knowledge base. To save go to "File-->Save" on the menu.
Save the Knowledge base we can test our Rules in two different ways. You can:
1. Load the Verbot Player then load your Knowledgebase or
2.we can Use "Test Knowledgebase" from the Tools menu in verbot player.

2.2Loading, Testing, and Talking
Now we have our fully completed Knowledgebase, so let us load and test our knowledge base.
Follow are the steps to begin interacting with your own Knowledgebase.
1. Click on the Verbot icon on your desktop.
2. Once the Verbot is loaded, click on the menu and go to "Tools --> Options."
3. Click on the tab labelled Knowledge bases.
4. Press Add and browse the Knowledge base that you have created.
5. Once you have chosen your Knowledge base, click Open.
6. Your Knowledgebase will be listed in the Knowledge base selection field.
7. Your Knowledgebase will be added to the top of the list. The list order identifies what Rule will be evaluated first when two Rules match from each Knowledgebase.
8. Before clicking "Close" you may uncheck other Knowledge bases you need not want the Verbot to use.
After finished selecting Knowledgebase's, click Close.
9. The Verbot will load your selected Knowledgebase's. Test the Rules you have created.

III.   CONSOLIDATION TABLE

S.no	Title	Device or method or algorithms	improvement
1.	Chabot Using A Knowledgein Database: Human-to-Machine Conversation modelling	MySQL(RDBMS),Bigram	Improved pattern matching.
2.	Convolutional Neural Networks for Speech Recognition	DNN,HMM	Improved speech recognition over GMM.
3.	Efficient Training and Evaluation of Recurrent Neural Network Language Models for Automatic Speech Recognition	RNNLM,FRNNLM	Improved scalability to large data sets using NCE based training.
4.	Automatic Speech Recognition With Very Large Conversational Finnish and Estonian Vocabularies	RNN,NNLM	Improvement in very large vocabulary speech recognization.
5.	Deep-Sparse-Representation-Based Features for Speech Recognition", IEEE/ACM TRANSACTIONS ON AUDIO, SPEECH, AND LANGUAGE PROCESSING	DSR method	DSR model alternates between sparse and dense layer and is successful in discriminating amongst various speech units.
6.	On Training Targets for Supervised Speech Separation	IBM(ideal binary mask),IRM,FFT-MASK	Improvement in speech recognization.

7.	A Regression Approach to Speech Enhancement Based on Deep Neural Networks	MMSE(Minimum mean square error),DNN	To improve the training techniques where further adopted to reduce the residual noise and increase the performance.
8.	Survey on Chabot Design Techniques in Speech Conversation Systems	NLP,NLTK in python	Designing a new AIML based Chatbot of natural language speech and limited word input and output so as to use it in an E-learning systems to enable disabled people to learn via speech.
9.	Automatic Extraction of Chabot Training Data from Natural Dialogue Corpora	ALICE, AIML	English, Arabic, Afrikaans or other languages, and a tool to access an information portal to provide answers to questions.
10.	Toward Human Parity in Conversational Speech Recognition	LSTM,CNN	Increased performance in both acoustic and language modelling.

IV.   CONCLUSION

In this paper we have proposed a Chabot to guide the students to choose the right career for the future jobs so that they can achieve their goals easier. The contributions of our work can be summarized as follows: Expanding the Knowledge base which creates a verbot knowledge base file. Once knowledge base Template has been expanded it can be viewed in the Verbot.

A Knowledgebase Template is used to create data's in the Knowledge bases. The first step is to create a CSV file which contains the data you wish to access. To access the data we need to create template rules. A Template Rule is a Rule which uses CSV data to create new Rules.

The new Rules are created when Expand button is pressed or when the Knowledgebase is compiled. Compiling a Knowledgebase Template creates a new compiler knowledge base file with extension .ckb, which is created based on the Knowledgebase Template Rules.

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