

Chat Bots for Contact Center's customer service to support repetitive queries.

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ABSTRACT

In this we are trying to describe a way to reduce the human resource consumption on redundant simple tasks at contact center by implementation of Chat Bot in contribution with NLP and AI Engine to learn and acquire knowledge from business's existing Knowledge Base to provide solution to customer's query. Effectively transferring basic solution providing tasks to chat bots, and leaving human interaction to escalation.

Keyword : - Chat Bots, Bots, Machine learning, AI, NLP, Knowledge Base Q&A.

1. Introduction

These days, "Everyone 'texts', so should your contact center". Bots controlling various aspects of internet has barely scratched surface since its inception. Automation through regression and Learning based models has superseded bots over human limitation of learning thoroughly. This power of bots can be used to channel the contact center into the way of becoming self-operative with more bots and less human work. Basic tasks could be handled by bots leaving escalations to humans, trimming precious human resource time from basic tasks to focusing on escalation tasks.

There are already number of ways for creating a chat bot with training on Language and complete solution mapping using AI, but this can be robustly done by mapping solutions to the existing Knowledge base of the business instead of building from scratch. This can be achieved with the help of NLP (Natural Language Processing). Machine Learning can be implicitly used to make this process more efficient for mapping Knowledge Base. Bots can learn to map redundant solution and can make decision with previous knowledge base to answer repetitive query without visiting to Knowledge Base, just based on experience with previous results.

2. Design

The process is divided in 3 parts: 1) Message Acquisition, 2) Query Processing, 3) Generating appropriate Query measures.

1) Message Acquisition:

User sends the query to the bot from the chat application (Skype, Telegram, slack, etc.) which is then sent to the REST API process cloud.

2) Query Processing:

The received query is then processed by NLP engine for searching the relevant question from the data store. Data store will be populated by extracting Knowledge Base of the business, with Q&A mapping.

3) Generating appropriate query measures:

There are 3 scenarios in this part,

- i. If a solution is found, it will be returned as the solution
- ii. If the system is not sure of the answer because of low confidence score, system will send answers of similar question to user with selection option so that user feedback will be generated and the confidence score of the answer selected by user will be increased and saved. So next time system will know the solution if same query is received again.
- iii. If no answer is found, then it will be forwarded to any available human resource.

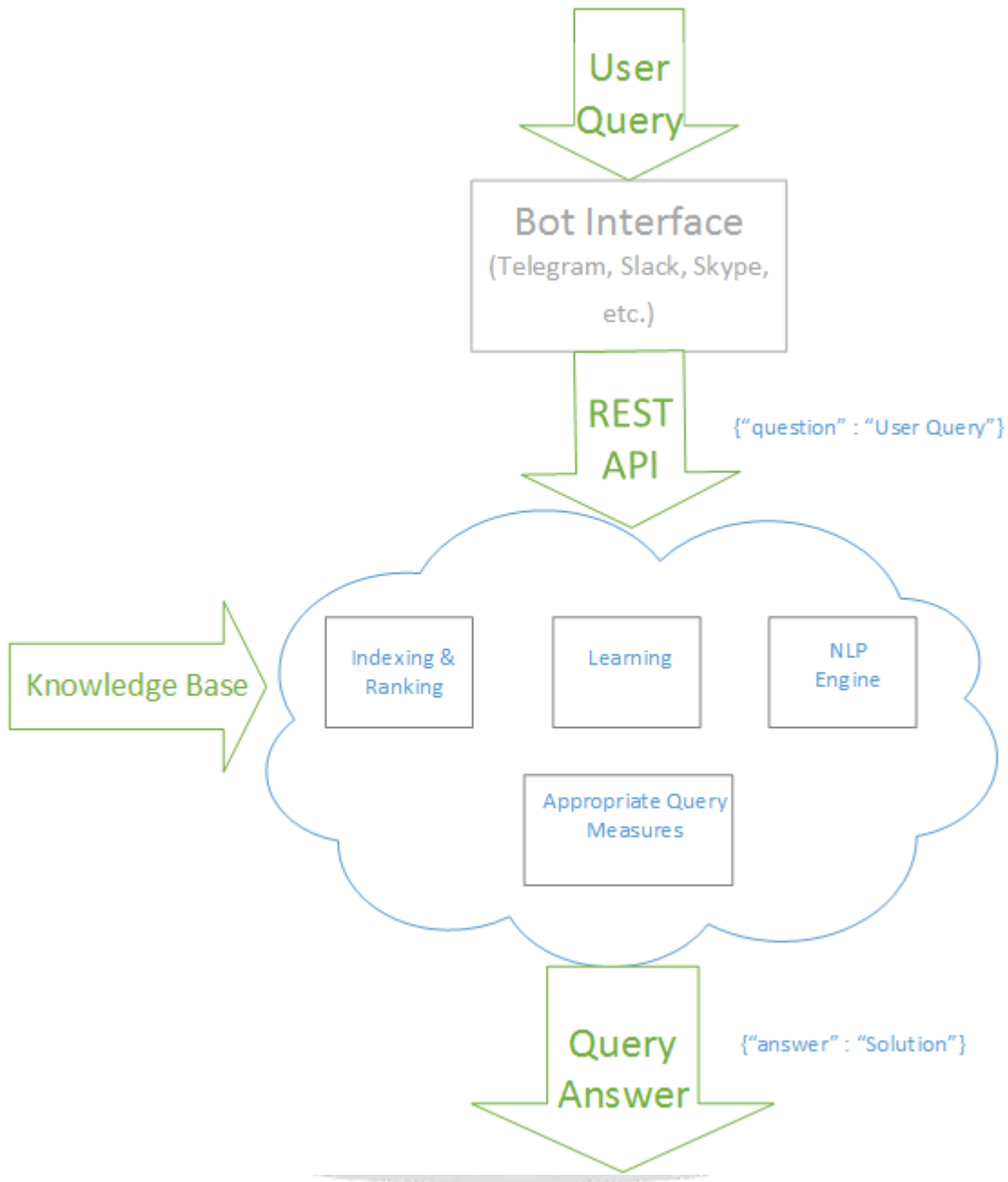


Figure 1 Chat bot flow chart

2.1 Analysis of messages:

Once there are abundant messages whose answer could not be found, an analysis of the message could be conducted to have an idea on which will be the most common answer to a particular query unknown to the data store. This might be done with the help of a human resource, who will feed in the solution to the system which will be integrated in its data store. This will keep the system in continuous improvement

3. CONCLUSIONS

It is difficult to create a Chat Bot if there is no specific goal. Only by having a good idea of what is intended to be achieved, and studying thoroughly the way to accomplish it, can good results be obtained. A Bot can hardly replace a human being, but it is a great help to accomplish specific objectives. Due to this a valuable human resource time can be diverted to the more important tasks of escalation or even some work that explicitly needs an intervention of a human resource. The efficiency can be exceptionally increased due to mechanism and nature of bots. The response time can be drastically decreased with help of cloud platform's processing power. Contact centers can be managed efficiently with less human resources.

6. REFERENCES

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