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Travel Guide – SAM Bot

Mounika Teppale, Akshita Sangam, Shivani Lakhane, Mr.Rajasekhar Sastry,

Dr.B V Ramana murty And Mr.C Kishor Kumar Reddy

Stanley College of Engineering and Technology for Women, Hyderabad

ABSTRACT

A chatbot may be a service that individuals shift with via a chat interface. A chatbot may be a program designed to simulate human conversation using Artificial intelligence this reduces complexness of finding and delivering answers to client queries. After becoming one among the trendiest words of the past few years these are expected to disrupt the travel business and set a brand new standard within the mobile booking arena. Chatbots will facilitate users reduced long hours of indecisive search. These chatbots provide higher and additional personalized customer expertise compared to websites and apps and are usually kind of like calling a human operator. Travel bots will assist travelers each with trip budgeting and convenient timing keeping all tickets in one place and replying with suitable answer.

Keywords: Chatbot, Artificial Intelligence, Travel, Interface

1. INTRODUCTION

Artificial intelligence (AI) is an area of computer science that emphasizes the conception of intelligent machines that will work and react like humans. Some of the activities that computers perform with artificial intelligence are designed for include: Speech recognition, Planning, learning and Problem solving. Research related with artificial intelligence is highly specialized and technical. Certain traits such as: Knowledge, Reasoning, Problem solving, Perception, Learning, Planning, Ability to manipulate and move objects are the core problems of artificial intelligence programming computers.

Knowledge engineering is a center part of AI research. Machines can often act and respond like humans only if they have plentiful information relating to the world. Artificial intelligence must have access to objects, categories, properties and relations between all of them to implement knowledge engineering. Initiating common sense, reasoning and problem-solving power in machines is a complicated and monotonous task.

A chatbot is a software program for simulating intelligent conversations with human using artificial intelligence. Users interact with the chatbot via conversational interface during written or spoken text. Chatbots can live in messaging platforms like Slack, Facebook Messenger and Telegram and serve many purposes – ordering products, perceptive about weather and organizing your finance among other things. In general terms, a bot is nothing but a software that will execute automatic tasks. In other terms, a bot is a computer program that is designed to communicate with human users through the internet. The most natural description of a chatbot is – a developed a program that can have a discussion/conversation with a human. For example, any user could ask the bot about any inquiry or a statement, and the bot will respond or perform the activity as appropriate. A chatbot interacts on a format similar to immediate messaging. By artificially replicating the patterns of human interactions in machine learning allows computers to learn by themselves without programming natural language processing. While a bot is a computer's capability to understand human speech or text short for chat robot.

A chatbot is merely a computer program that basically simulates human conversations. It allows a form of communication between a human and a machine this communication, which happens via messages or voice command. A chatbot is programmed to work autonomously from a human operator. It can answer questions formulated to it in natural language and respond like a real person. It provides responses based on a grouping of predefined scripts and machine learning applications. When it is asked a question, the chatbot will react based on the knowledge database available to it at that point of time. If the conversation introduces a idea it is not programmed to understand, it will either avert the conversation or potentially pass the communication to a

human operator. Either way, it can even learn from that interaction as well as from future interactions. Thus, the chatbot will gradually grow in scope and gain significance.

A chatbot is an artificial intelligence (AI) software that can reproduce a conversation (or a chat) with a user in natural language through messaging applications, websites, mobile apps or through the telephone. A chatbot is often described as one of the most sophisticated and promising expressions of interaction between humans and machines. However, from a technical point of view, a chatbot only represents the natural development of a Question Answering system leveraging Natural Language Processing (NLP). Formulating responses to questions in natural language is one of the most typical Examples of Natural Language Processing applied in various enterprises end-to- end use applications.

A Chatbot of Travel apps are often helpful for tourists, the foremost common grievance that travelers have with these apps is that every one in all them focuses on a special role. for instance, one app provides info on traveller attractions during a explicit town. Another offers time period weather updates. one more manages flights and building bookings. For the common traveller, these will add up to a major quantity of cupboard space on their phone. Further, several of them become redundant when one trip, and want to get replaced with a special app.

Conversations with travel chatbots area unit refreshfully totally different. somebody inquisitive about exploring a replacement town will simply head to the chat window and raise an issue like, "What area unit the ten best things to try and do in ?"Even writing keywords like "restaurants", "museums", "shopping" or "hiking" can manufacture helpful and relevant info concerning places they will visit. the simplest chatbots for business enterprise services conjointly integrate options like directions and guest reviews with their suggestions, serving to tourists create the proper selections supported their schedule, budget, and alternative preferences.

Organization of thesis

The rest of the thesis is organized as follows:

- Chapter - 2 depicts the relevant work on chatbots and travelling chatbot.
- Chapter - 3 prepares the intelligent travel system chatbots.
- Chapter - 4 discusses the procedure and implementation.
- Chapter - 5 concludes the thesis followed by references.

2. LITERATURE SURVEY

A chatbot is a program designed to simulate human conversation using artificial intelligence .They are programmed so that they mimic human conversation. They have pre-programmed interactions that allow users to interact in a natural way. A particular industry in which chatbots are booming is the travel industry. Hence ,we have the "Travel bot" ,a chatbot that either provides automated customer service on travel company's website or operates through a messaging platform such as Facebook messenger to converse with a traveller and assist with booking travel. We are leveraging natural language processing and an instant messaging interface to create virtual travel assistants that operate like travel bot and also include some other robust features. Among many potential uses of technological advancements in travel, chatbots occupy their own position. Let's have a glance at the types to explore the basic use cases for travel chatbots.

Reservations agent: Some of the websites like Booking.com, Skyscanner, and many other reservation services allow travellers to seek flight and hotel endorsements and book them via Facebook Messenger etc. Chatbots offer better and more modified customer experience when compared to websites and apps and are often similar to calling a human operator. Users are generally fortified to start with typing their starting point, destination and desired dates , which will then allow a bot to search through hundreds of sites for the best contract. Moreover, travellers can expect additional functionality such as route tips and etc. Nevertheless, some bots go beyond reservations and can assist in saving money on booking.

Disruption and customer care manager: In the social-media conquered world, salespersons find it hard to keep any disruption processes private and avoid negative word of mouth. Customer support via chatbots allows users to privately report their complaints that AI can automatically rank and sort for easier handling. Now,

instead of looking for a contact number or speaking about their troubles to staff members who might not responsible for a failure, customers can use a bot to request support. Additionally, travel businesses can track problems and react to them therefore helping them to lessen some of the stress their employees experience. It allows hotels to respond to feedback in time and avoid bad reviews.

Online Travel Agency(OTA): Due to the Natural Language Processing ability, chatbots can understand or can be trained to recognize inaccurate queries to offer a complicated set of services, from transportation to places to stay and visit. This bot will catch the stimulated words and use them in the search without making a customer go through a long study with limited reply options. Travel chatbots can support travellers both with booking and trip budgeting, keeping all documents and tickets in one place, sending updates and reminders.

Expense management: It is the element of commercial expense management that deals exactly with controlling business travel expenses. To decide how these expenses will be managed , organizations create a travel policy to let employees know how much they can spend and on what.

Local insider: These chatbots take their contents from adjacent locations and provide options to the traveller. So that the customers don't have to search for the most suggested places on social media or browse the local discussion boards. Such bots can become a part of the hotel service and are located in Japan and Germany. It provides information about sights, local food and helps direct around the country and can be used in the allocation process too.

Customer care: A chatbot can ease the job of customer care by systematizing customer care query responses. From FAQ's to advice to travel tips , a chatbot can help bring spontaneous customer service to all. Chatbots in travel industry can help bring personalization in communication. Chatbot is one such accessible way to provide a great buying experience that is also cost effective.

Benefits of Chatbots in Travel

Better Customer service : Chatbots are probable to deliver seamless customer service. If it is about communicating urgent information or providing solutions to immediate problems , chatbots can handle it all. The customers will always feel our care by their side regardless of their time. This is something travellers always need. By being available for our customers , we will be able to provide a spontaneous level of customer service.

Improved Engagement : A chatbot is one such customer touch point which safeguards maximum engagement. Travel bots are able to solve queries , give references , pledge dealings or just casual exchanges. With so many opportunities , an extra feature of time availability improves customer's engagement with our brand than on social media or any other app.

More Revenue Opportunities : Chatbots are skilled of taking customer from awareness stage to conversation stage within minutes. We can also add bids , coupons and even payment gateway in our chatbots. A research by The Google shows that 69% of business travellers and 65% of holiday travellers go online for travel planning. It also says that 92% of millennials find live chat engaging and 23% of them are predicted to spend $1.4 trillion by 2020. All this brings more possibilities of conversations and revenue growth through travel chatbots.

Competitive Advantages : From airlines to travel agencies , the entire travel industry is quickly accepting travel chatbots. If you are innovative , you can still grab the early bird advantage with some of the major travel companies. From hotel to airlines to cabs , all companies that deliver travel service have their chatbots ready.

Cost Effective : Bot development is highly cost effective. With the power of artificial intelligence, chatbots are able to solve many customer queries or problems easily , which means we no longer need an additional 3rd party customer care centres. Also , new travel start-ups can skip app development and straight away move to bots to save resources. The application costs of chatbots are coming down and many service providers have also emerged. Natural language processing have smoothly become enough to enable development of more complex solutions.

Saves Time : Chatbots can handle routine queries and save precious time of customers service representatives. This will enable them to handle more complex customer problems and lay focus on other complex administrative activities. Moreover, a good bot can unblock call centres and automatically handle things like repetitive booking changes. If your bot is skilled to handle customer problems then it can ease the workload and will also save customer's time that is spent in reaching out to service executives.

Access to Data : Chatbots record each of their communications with the users. This means that they collect data that gives insights into the customer experience , purchase history , problems etc. This will help companies increase a 360 degree view of their customers. Using the perceptions generated from chatbots , companies can send personalized marketing messages. This will bring in private touch anticipated by the customers since long time. Also , from the customer's perspective , they will always have access to the chat history so they can refer their queries at any point of time.

3. PROPOSED CHATBOT

ARCHITECTUREOF NODE RED

In the node-red first select the input node inject and give the name as hello, Now from the output node select the debug node and give the name as msg.payload.

- Connect the output of hi to input of msg.payload .The msg called successfully injected will appear on the screen, now deploy.
- Now again successfully inject "hi".In the IBM cloud ,go to resource list and create resource. Now drag the assistant
- Now, connect the assistant node to msg.payload and hi. hi input to input of assistant and output of assistant to input of msg.payload by changing the username as apikey and giving password.
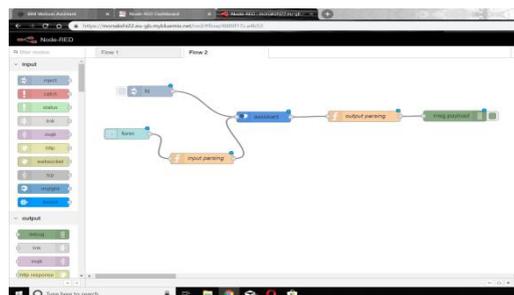

Figure 1:Node red flow-1

- Now take two functions that are output parsing and the input parsing and connect one end of output parsing to the msg.payload and another end to the assissant and again move towards the input parsing where the input is given to the form and the output to assistant.
- Now deploy them and move to the manage palatte .
- Now to have form we need to install node-red dash-board so move to manage palate and click on install.
- In the node properties give group as home size as auto and example as text and click on done. Now drag the form from search filters and click the assistant input to form output. Now select msg.payload =msg.payload.text;from the functions.

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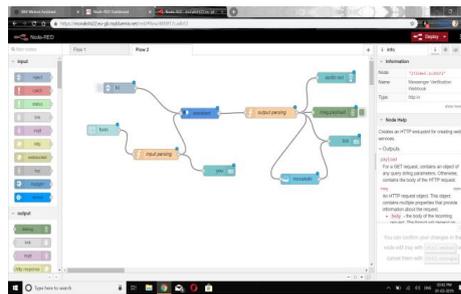
Figure 2:Node red flow-2

- Now take the two text boxes on to the screen and name one as you and another one as bot these two will be excuted in the main screen as you and bot.
- Now connect the you to the input parsing and bot to the output parsing
- Now, go to debug and give label as bot and you.Value format as{{msg.payload}} and click on done.After the above process is done create a new block and give it as form. On the right side of the screen click on dashboard and go to layout and click on home. Now, deploy the total block.
- And there is a cloud named as monakshi and the input is connected to the output parsing and output to the bot.
- Now, drag the audio out by searching it in the search filter and connect its input to output of output parsing. Now the again deploy the total block.
- Dash board is on the right side of the screen and go to edit audio out node. Give TTS voice as shown in the figure and click on done.
- After the audio out is connected drag a switch .Edit switch node by giving data base as travel bot. Now, connect the one output of switch to travel bot and other to bot. Now again connect the output of travel bot to input of bot. Debug the above function and edit the function node which is dragged on to the screen by giving the name as database parsing .After the name is given as database parsing then select the function msg.payload=msg.payload events;
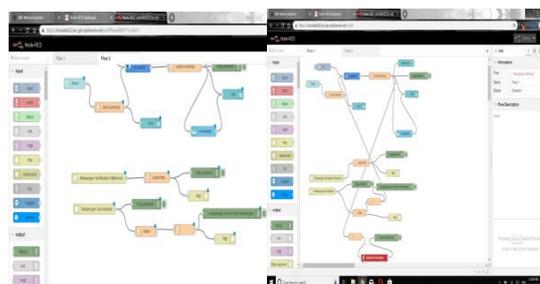

Figure 3:Node red flow-3

- Now login into your facebook account by giving the user name and password. Then go to create option you will have some sub options in it and click on create a page.
- And give the page name as travel Sam chat bot. You can build a bot that automatically posts content into groups, responds to questions with extra information or takes action when mentioned in comments on a post. After visiting the page go to settings on face book developers and generate a page, Now the events selected will be completed.
- Now a one more block from facebook page will be presented and select the page and attach it to the node-red and see weather the page is correctly on the flow.
- Paste the flow-2 below the folw-1 see that both the flows are not one on other.Go to layout and click on home add the name,function and click on done.
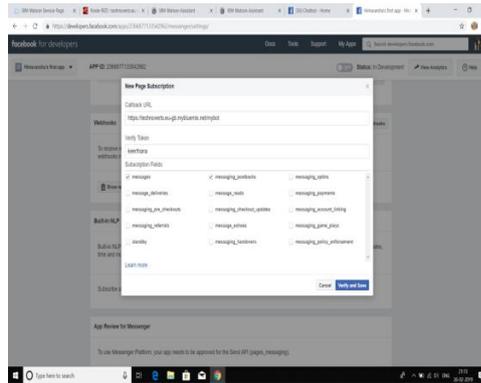
Fig 4:Facebook integration

- Enter Your Redirect URL to take people to your successful-login page.
- Check the login status to see if someone's already logged into your app. ...
- Log people in, either with the login button or with the login dialog, and ask for a set of data permissions.

4. RESULTS AND DISCUSSION

- IBM Watson Assistant is a white label cloud service that allows enterprise- level so developers to embed an artificial intelligence virtual assistant in the software they are developing and brand the assistant as their own.
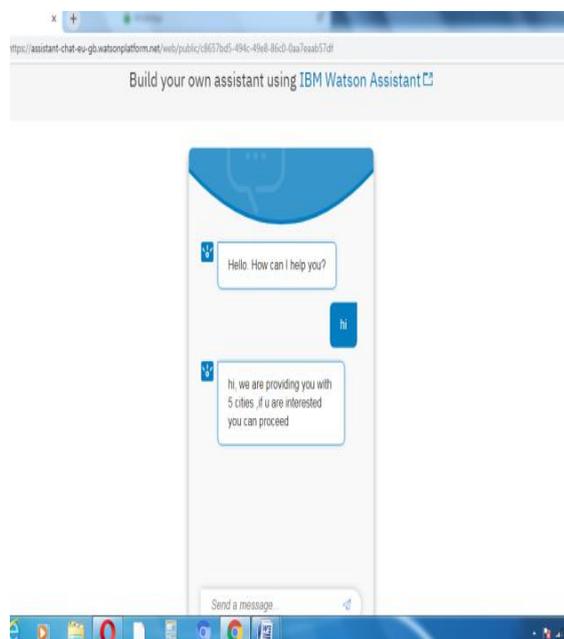
Fig 5: Greetings

- I wanted to give my own bot the topic as travel bot and firstly it starts as follows.
  This is the starting message of the chat bot it starts with greetings. Next it gives the brief about what can and how can it helps you and what it is providing is given here.And next it provides with 5 places information we need to select the places which we are interested to visit and this bot helps you to locate the place by providing the place photos and the history or a little information about it so that it may create interest to the visitors on the place.

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Figure 6:Place information

The above figure gives us the picture and the information about the city which you wanted to visit.
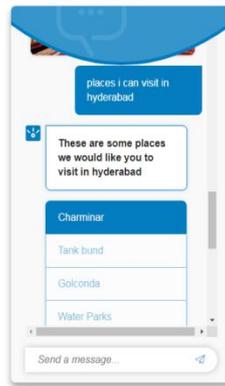
Figure 7:List of the places in a city

And in this we even provided with the sub places that which are very famous to visit in that city . in every city we provided with 5 famous hotspots so that they can easily identify and have a easy plan on travelling.and if you want to visit any places you can give places in so and so city and even want about the sub places then the places I can visit in so and so place can be given. Then it will provide you with the famous places you can visit in the city and click on any one place it will provide you with the place address ,photo and history of that place as shown in below figure.
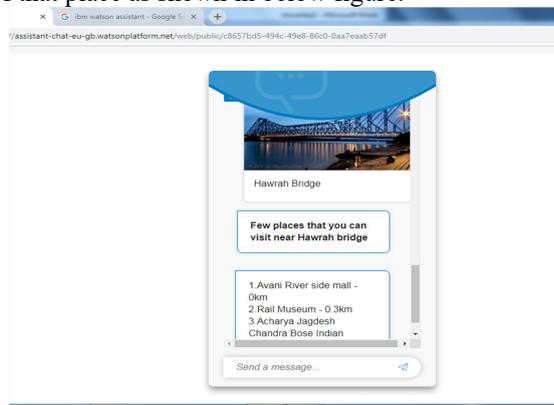
Figure 8: landmarks of a place

And it provides you with places and even the landmarks near the place within 2 kilometers
Click on place inside the city then the bot responds you with the picture of the place and even the landmarks of the place with the ranges and hotels and resturatents are provided with the ranges.
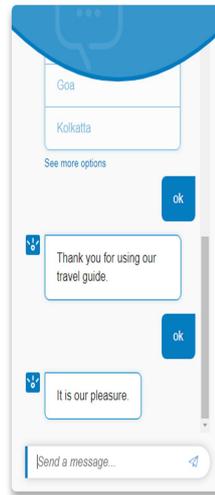
Figure 9: Ending message

The last message of the bot is by thanking them for using the bot and hoping the day goes well.and in this way it gives entire information about the city for a travillar who is strange to that place.

5. CONCLUSION

SAM bot is a travel guide chatbot where user can interact and get answeres with regarding his/her travel interests. Any user who is new to any cities we have provided with, then he/she could get the information about that place. Here user can find the city's importance, and the main attractions of that city. If the user even want to explore the places, we provide them with the surrounding places they can visit, shop, enjoy and many more.

6. REFERENCES

[1]. https://chatbotsmagazine.com/travel-chatbot-how-chatbots-can-help-city-tourism-a2f122c0896d

[2] Statista- the statistics portal. https://www.statista.com/statistics/298916/ us-digital-travel-sales-revenue-channel/,.

[3] Aaron Bangor, Philip Kortum, and James Miller. Determining what individual sus scores mean: Adding an adjective rating scale. Journal of usability studies, 4(3), 2009.

[4] Bayan Abu Shawar and Eric Atwell. Chatbots: are they really useful? In Ldv forum, volume 22, 2007.

[5] Matt Schlicht. The complete beginner's guide to chatbots. Chatbots Magazine, 20, 2016.

[6] Google trends. https://trends.google.com/trends/.

[7] Bayan Abu Shawar and Eric Atwell. Different measurements metrics to evaluate a chatbot system. In Proceedings of the workshop on bridging the gap: Academic and industrial research in dialog technologies. Association for Computational Linguistics, 2007.

[8] Elizabeth D Liddy. Natural language processing. 2001.

[9] Ronan Collobert, Jason Weston, Léon Bottou, Michael Karlen, Koray Kavukcuoglu, and Pavel Kuksa. Natural language processing (almost) from scratch. Journal of Machine Learning Research, 12(Aug), 2011.

[10] Eric Brill. A simple rule-based part of speech tagger. In Proceedings of the third conference on Applied natural language processing. Association for Computational Linguistics, 1992.

[11] Fernand Gobet, Peter CR Lane, Steve Croker, Peter CH Cheng, Gary Jones, Iain Oliver, and Julian M Pine. Chunking mechanisms in human learning. Trends in cognitive sciences, 5(6), 2001.

[12] Erik F Tjong Kim Sang and Fien De Meulder. Introduction to the conll-2003 shared task: Language-independent named entity recognition. In Proceedings of the seventh conference on Natural language learning at HLT-NAACL 2003-Volume 4. Association for Computational Linguistics, 2003.

[13] Xavier Carreras and Lluís Màrquez. Introduction to the conll-2005 shared task: Semantic role labeling. In Proceedings of the ninth conference on computational natural language learning. Association for Computational Linguistics, 2005.

[14] Zhuling Zhong, Jing Luo, and Mu Zhang. Understanding antecedents of continuance intention in mobile travel booking service. International Journal of Business and Management, 10(9), 2015.

[15] Iis P Tussyadiah and Juho Pesonen. Impacts of peer-to-peer accommodation use on travel patterns. Journal of Travel Research, 55(8), 2016.

[16] Francesco Ricci, Lior Rokach, and Bracha Shapira. Recommender systems: introduction and challenges. In Recommender systems handbook. Springer, 2015.

[17] Damianos Gavalas, Charalampos Konstantopoulos, Konstantinos Mastakas, and Grammati Pantziou. Mobile recommender systems in tourism. Journal of network and computer applications, 39, 2014.

[18] Sumitkumar Kanoje, Sheetal Girase, and Debajyoti Mukhopadhyay. User profiling trends, techniques and applications. arXiv preprint arXiv:1503.07474, 2015.

[19] Microsoft bot famework. https://dev.botframework.com/,.

[20] Dialogflow. https://dialogflow.com/.

[21]Ibmwatson.https://www.ibm.com/Watson

[22] Amazon lex. https://aws.amazon.com/pt/lex/,.

[23] Nodejs. https://nodejs.org/en/.

[24] Ngrok. https://ngrok.com/,.

[25] Amadeus travel innovation sandbox. https://sandbox.amadeus.com/,.

[26] Expedia. https://www.expedia.com/,.

[27]Googleforms.https://www.google.com/forms/about/,.