TRAVEL CHATBOT

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ABSTRACT

A chatbot is a computer programme that imitates a human travel agent by interacting with users using natural language. A well-implemented chatbot system can analyses user behavior. Predicting collective intelligence and preferences In the majority of cases, it ispossible to make better recommendations based on the needs of the user As a result, the chatbot is becoming an essential component of future consumer services This is a pa-An intelligent chatbot system has been implementedin the travel industry. On the Echo platform, there would be a domain that would collect user preferences and model a user's collective knowledge base and suggest that they use the Re-Collaborative Filtering with a Strict Boltzmann Machine (RBM).We can improve human to machine communication with this DNN-based chatbot. In the travel domain, there is a chine-to-chine interaction.

Keyword: - ML (Machine Learning), NLP (Natural Language Processing).

INTRODUCTION

In the Human-Computer Interaction Domain, designing and implementing natural and intuitive interaction modalities isa primary research field. At the moment, there is a lot of research going on into systems that can interact with users intheir natural language.

With the introduction of devices and technologies such as Google Home, Amazon Echo, NLP, ML, and AI, voice- enabled chatbots are becoming increasingly popular. A chatbot is a computer programme that can initiate, continue, and handle complex interactions with human partners using natural language. Voice-enabled chatbots are now widely regarded as both traditional and innovative interfaces for natural language interaction with machines.

The Chatbot is designed to mimic a real-world travel agent who achieves a goal by conversing with the machine in a dialogic manner using natural language.

MOTIVATION

Chatbots have the potential to usher in a new era in how people interact with data and services. There are currentlyno empirical studies examining why people use chatbots. This research adds to our understanding of motivation. The use of conversational interfaces is influenced by a numberof factors. Its findings can be used to guide future re- designs. A search on this topic may yield new insights and serve as a guide for future design and development.

LITERATURE SURVEY

Md. Sajid Akbar, Pronob Sarker, Ahmad Tamim Mansoor. "Model of Multi-turn Dialogue in Emotional Chatbot" [1]. Chatbot is a computer application that interacts with users using natural language is a similar way to imitate a human travel agent. A successful implementation pf a chatbot system can analyze user preferences and predict collective intelligence. In most cases, it can provide better user-centric recommendations. Hence, the chatbot is becoming an integral part of the future consumer services. This paper is an implementation of an intelligent chatbot system in travel domain on Echo platform which would gather user preferences and model collective user knowledge base and recommend using Restricted Boltzmann Machine (RBM)with Collaborative Filtering. With this chatbot based on DNN, we can improve human to machine interaction in the travel domain.

Lin Zhi-heng, Li Yong-zhen, "Intelligent travel chatbot for predictive recommendation in echo platform", The concept of using computers to answer questions has been around since the beginning of these systems. The first algorithms aimed at achieving this goal were developed in the early 1960s. Chatbots have exploded in popularity in a variety of fields in recent years. They are regarded as useful tools for improving customer relationships in the context of business applications. Customers' chat conversations with a telecommunication company's chatbot are examined in this paper to see if these interactions can be used to determine a) users' topics of interest and b) user satisfaction. Chat conversations are interpreted as sequences of events, and user inputs are analyzed using text mining techniques to achieve this goal. According to the research, Refik Samet, Muhammed Tanriverdi, "Face Recognition-Based Mobile Automatic Classroom Attendance Management System", The attendance check in the classroom is an important aspect in student participation and overall course achievement. Taking attendance by calling names or passingaround an attendance sheet takes time, and the latter is especially vulnerable to fraud. RFID, Bluetooth, fingerprint, iris, and facial recognition-based technologies have all been researched and developed as alternatives. Although thesetechnologies have some advantages, the main downside is the high cost of system installation. The goal of this study is to offer a facial recognition-based mobile automatic classroom attendance management system that doesn't require any additional hardware. Face recognition has been established using a filtering system based on Euclidean distances derived by three face recognition approaches, namely Eigenfaces, Fisherfaces, and Local Binary Pattern. Three different mobile applications for teachers, students, and parents to install on their smart phones to manage and perform the real-time attendance-taking process are includedin the proposed system. The proposed system was put to the test among students at Ankara University, and the results were extremely positive.

Priyanka Wagh, Jagruti Chaudhari, Roshani Thakare, Shweta Patil, "Yapay Zeka Tabanlı Rehber Robotlara Genel BirBakı¸ Örnek Bir Rehber Robot Uygulaması An Overview of Artificial Intelligence Based", ChatBot is apiece of software that uses artificial intelligence to converse with people. These programmes are used to perform tasks such as responding quickly to users, informing them, assisting in the purchase of products, and providing better customer service. The general working principle and basic concepts of artificial intelligence-based chatbots and related concepts, as well as their applications in various sectorssuch as telecommunications, banking, health, customer

call centres, and e-commerce, are presented in this paper. Additionally, using the proposed architecture, the results of an example chatbot for donation service developed for a telecommunication service provider are presented.

Edy Winarno, Imam Husni Al Amin, Herny Februariyanti, Intelligent Chatbot for Easy Web-Analytics Insights". Intoday's fast-paced data-driven world, accurate insights are critical for making the right decisions at the right time.There are numerous web analytics tools that provide performance reports for online websites. However,mastering the tools, let alone gaining insights to understand the business implications, is tedious and time-consuming. Inthis paper, I compare the ease of use of two widely used analytics tools. In light of this, I propose a chatbot powered by Artificial Intelligence Machine Learning (AIML) and fueled by analytics' raw data, which will allow bot users to get business insights by simply typing in a query. In this paper, I propose a chatbot that would help people communicate with each other.

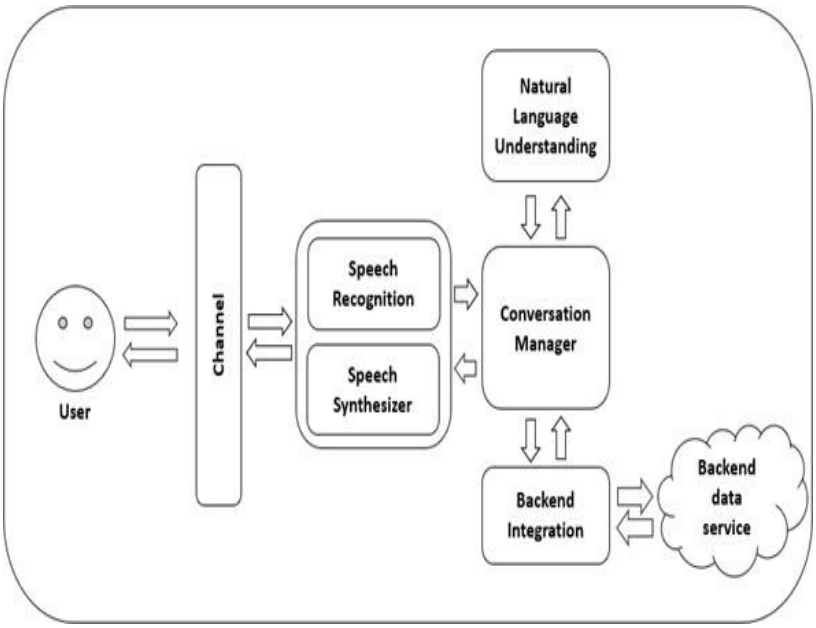

Fig -1 System Architecture

ALGORITHM

NLP Algorithm :- Automatic summarization of the main points in a text or document is achieved using NLP algorithms. NLP algorithms are also used to classify text into predefined categories or classes, as well as to organize data and in spam filtering and email routing.

1. COMPONENT DESIGN

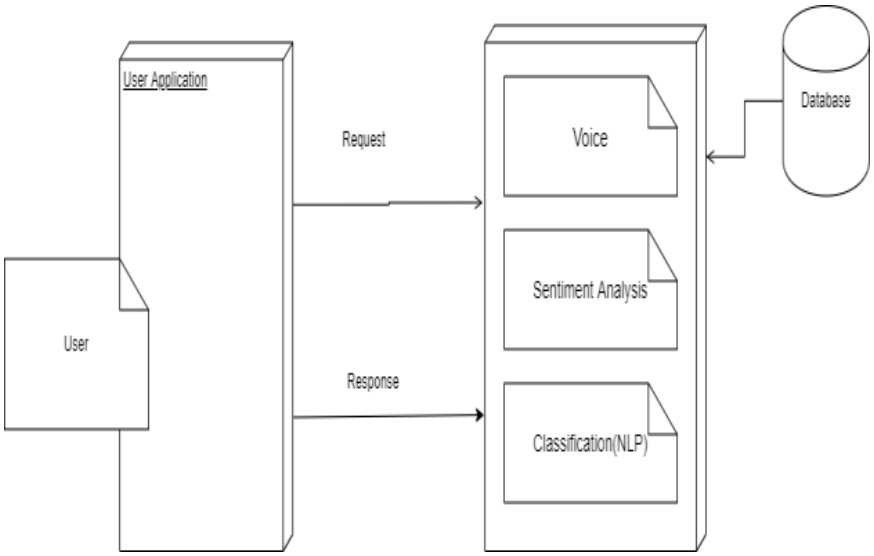

Fig -2 Deployment Diagram

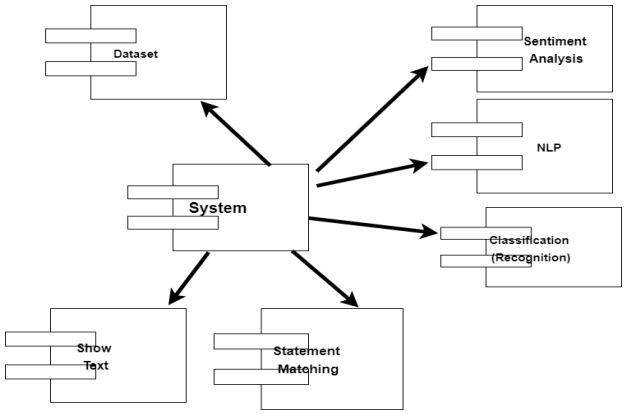

Fig -3 Component Diagram

2. MATHEMATICAL MODEL

Let S be the Whole system S= I, P, O

I-input

P-procedureO-output Input (I)

I= Travelling Chatbot dataset Where,

Dataset- Text to speech data, Voice to voice, LanguageTranslation Procedure (P), P=I,

Using I System perform operations and calculate theprediction Output(O)-O=System detect chatbot

3. MODULES

Module 1: Press the button for voice input

Module 2: We need to give our question or query to system. Module 3: System will recognize the speech.

Module 4: Recognize the query using Speech RecognitionModule and convert to text using text Conversion.

Module 5: Translate the query using translator Module 6: Match the query in database (Use NLP).

Module 7: Response to query by translating in quick way.

4. SDCL MODULE

The software development cycle is a combination of different phases such as designing, implementing and deploying the project. These different phases of the softwaredevelopment model are described in this section. The SDLCmodel for the project development can be understood using the following figure The chosen SDLC model is the waterfall model which is easy to follow and fits bests for the implementation of this project.

Requirements Analysis: At this stage, the business requirements, definitions of use cases are studied and respective documentations are generated.

Design: In this stage, the designs of the data models will be defined and different data preparation and analysis will be carried out.

Implementation: The actual development of the model will be carried out in this stage. Based on the data model designs and requirements from previous stages, appropriate algorithms, mathematical models and design patterns will beused to develop the agent's back-end and front-end components.

Testing: The developed model based on the previous stages will be tested in this stage. Various validation tests will be carried out over the trained model.

Deployment: After the model is validated for its accuracy scores its ready to be deployed or used in simulated scenarios.

Maintenance: During the use of the developed solution various inputs/scenarios will been countered by the model which might affect the model's overall accuracy. Or with passing time the model might not fit the new business requirements. Thus, the model must be maintained often to keep its desired state of operation

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REFERENCES

[1] Victor Zhong, Caiming Xiong, et al., "Seq2sql: Generating structured queries from natural language using reinforcement learning," arXiv:1709.00103, 2017.

[2] Xiaojun Xu, Chang Liu, et al., "Sqlnet: Generating structured queries from natural language without reinforcement learning," arXiv:1711.04436, 2017.

[3] Tao Yu, Zifan Li, et al., "Typesql: Knowledge based type- aware neural text-to-sql generation," arXiv:1804.09769, 2018.

[4] Li Dong and Mirella Lapata, "Coarse-to-fine decoding for neural semantic parsing," in ACL, 2018.

[5] Wonseok Hwang, Jinyeung Yim, et al., "A comprehensive exploration on wikisql with table-aware word contextualization," arXiv:1902.01069, 2019.

[6] Pengcheng He, Yi Mao, et al., "X-sql: reinforce schema representation with context," arXiv:1908.08113, 2019.

[7] Jacob Devlin, Ming-Wei Chang, et al., "Bert: Pretraining of deep bidirectional transformers for language understanding," arXiv:1810.04805, 2018.

[8] Rico Sennrich, Barry Haddow, et al., "Improving neural machine translation models with monolingual data," in ACL, 2016.

[9] Augello A. Saccone G. Gaglio S. Pilato G., Humorist Bot: Bringing Computational Humour in a Chat-Bot System. Proceedings of the International Conference on "Complex, Intelligent and Software Intensive Systems (CISIS)", 4-7 March 2018, Barcelona, Spain, pp.703- 708.

[10] Gambino O. Augello A. Caronia A. Pilato G. Pirrone R. Gaglio S., Virtual conversation with a real talking head. Proceedings of the Conference on "Hu man System Interactions", 25-27 May 2018,Kraow, Poland, pp. 263-268.

[11] Vojtko J. Kacur J. Rozinaj G., The training of Slovak speech recognition system based on Sphinx 4 for GSM networks. Proceedings of International Symposium "EL, MAR (Electronics in Marine) focused on Mobile Multimedia", 12- 14 Sept. 2017, Zadar, Croatia, pp. 147-150.