



IBM Team 05

Literature Survey on AI Based Discourse for Banking Industry

Team members:

Subraja M
Mohan R
Pavithra P
Priyanka G S

Guided by:

Mr.M. Chandraman
Assistant Professor / ECE

Literature Survey

Paper 1: Conversation to Automation In Banking Through Chatbot Using Artificial Machine Intelligence Language

Author: Sasha Fathima Suhel , Ved Prakash Mishra.

Published Year: 2020

Chatbot is a conventional agent. It is developed by using artificial intelligence and natural language processing (NLP) algorithm. This application is used for the interaction between human and automated conventional agent. It can be in the form of content/text or voice mode. Chatbot give answer for the customers questions like customer service, product suggestions, product inquires. Chatbot's are commonly used as tools for knowledge Retrieval, such as product specifics extraction.

Virtual assistants Can help improve business performance, such as informing you About appointments, handling the to – do lists, taking notes, etc. Both are called interfaces for communication, but both are very Distinct from each other. 50% of businesses plan to spend more on chatbots than on mobile apps. 64% of internet users say 24-hour service is the best feature of chatbots. 37% of people use a customer service bot to get a quick answer in an emergency. There were over 300,000 chatbots on Facebook in 2018.

Paper 2: Review on Implementation

Author: Nithuna S , Laseena C.A

Published Year: 2021

Many significant tech organizations are utilizing a virtual Assistant or chat agent to fill the necessities of clients. A Chatbot is a conversational specialist where a computer Program intended to reproduce an intelligent discussion. But Artificial Intelligence Markup Language (AIML) Based chatbot is the highest popular that they are simple to Arrange. One of the examples of AIML based chatbot is ALICE.

The most common type of chatbots are based on Rule based and AI based. Chatbot use NLP tools for AI. Computers are configured in this framework for reading, processing and analysis large amount of natural language information. Technologies of AI includes deep learning and algorithms for machine learning. Suppose the user encounter the unfamiliar commands or unrecognised phrases means the bots does not respond.

In encounter – decoder architecture use sequence to sequence model RNN which is a popular DNN architecture especially for NLP tasks. The input sequence is fed as a vector representation of a text to the encoder and some intermediate representation information or thought vector is produced by the encoder. Then the thought vector is fed into a decoder as a input. Finally the thought vector processes the decoder and converts the sequence one by one word and produces multiple outputs in the form of targets sequence.

Paper 3: Effective Back Channel Response to User Queries using Banking Bot Artificial Intelligent System

Author: M. Senthamil Selvi , A. Kayalvizhi , C. Premalatha

Published Year: 2019

In banks, at customer care centers the availability of human is insufficient and hence take a long time to process a single request. The Chat bots are developed by training the system based on the pre-compiled knowledge. The system once trained will be able to retrieve the data from the dataset using frequent pattern matching algorithm. The Intelligent system is associated with activities like human thinking, decision making, and problem solving process.

The main advantage was that AI machines are increasing rapidly by providing better solutions. Chat bot are considered as a intelligent personal assistants also called as virtual assistants on mobile devices The result is a well performing fully functional AIML interpreter tailored around AIML 1.0 specification. A chat bot is software that is used to interact between a computer and a human in natural language. They are created Effective GUI Module,Text-to-Text Module, Speech-to-Text Module. User give the input they have a two adapters text to text and speech to text.

The Implementation of the chat bot Training chat bot,Pattern Matches,Natural Language Understanding (NLU),Chat bot learning on Live. The future enhancement of banking chat bot is to implement Speech-to-speech conversation. The Chat bot that provides retail banking customers their credit score, enable them to set and manage their budgets, and notify them about transactions.

Paper 4: Humorist Bot: Bringing Computational Humour in a Chat-Bot System

Author: Agnese Augello, Gaetano Saccone, Salvatore Gaglio

Published Year: 2008

Computational humour deals with the analysis of the humour with the main aim of computationally managing verbal humour. The humorous effect has been obtained by automatically changing some word present in an acronym preserving the rhyme and rhythm. Humorist bot is a chat-bot provided with sense of humor, it is capable of telling humorous anecdotes to the user and it is also capable of listening jokes, trying to understand their humorous level.

1.Alliteration: The alliteration, the rhetoric figure consisting in the repetition of a letter, a syllable or a phonetic sound in successive words is a feature present in the most of humoristic sentences.

2.Antinomy: The presence of antinomies in a sentence is another feature producing an humoristic effect. A specific module for the detection of in a sentence has been developed; the module exploits the semantic relation defined into the lexical dictionary WordNet. Standard AIML categories of the Alice chatbot The Humoristic chat-bot knowledge base includes the set of standard Alice categories, which allow the chat-bot to entertain the user dialoguing about non humoristic topics.

Paper 5: Smart Banking Chatbot

Authors: Akshay Shinde, Nitish Dulaji, Atharv Hemant, Prashant Y. Itankar

Published Year: 2013

The purpose of the project is to make any domain-specific website, more usable by integrating a chatbot that serves as an interface for customer inquiries about services. This reduces customer interaction time with website. To create a contextual assistant for the above purpose, we used the RASA framework.

Natural Language Understanding(NLU) which understands what the user is trying to communicate or what is the intent of the provided sentence, Dialog Management which maintains the state of communication by remembering what key pieces of information have been provided by the user and how to drive the conversation ahead and Natural Language Generation(NLG) which handles the part where the chatbot figures out what the bot should respond to back to the user.

This paper presents a chatbot deployed on a banking website that offers certain services like checking account balance, making a transaction, and many more to users right in the chat window. Our solution consisted of creating a pipeline having a chatbot and several actions triggered by the chatbot. These actions will connect with the database and then provide the required data or make changes according to the user's query and display the feedback back to the user via the chat widget.

Paper 6: Role of AI-Induced Chatbot In Enhancing Customer Relationship Management In The Banking Industry

Authors: Meganathan Kumar Satheesh, Nagaraj Samala, Raul Villamarin Rodriguez

Published Year: 2019

Introduction of the chatbots has enhanced the customer experience by improving the present services, smoothing the process of dealing with a large number of customers in providing the information about the offers and benefits of the products like house loans, cards related details, etc. Then, existing customers have given an extended level of convenience from chatbots, such as the promotion of products with sample screening. Finally, the chatbots were streamlined to focus on handling the customers frequently asked questions that need to be automated due to repeatedly asking the same questions.

Three critical components take place in the architecture of the dialogue system, At first, Natural Language understanding system that is responsible for decoding the message sent by the user and transmitting it into the other system for further processing. Next, the dialogue managing system that is used to track the context from which the output is extracted. At last, the Natural language generating, shows the final output into natural language. Machine learning techniques deal with the system that understands the linguistic structure of the human dialogue with respect to semantic and syntactic information.