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Shivangi Srivastava
Dept of Computer Science
K S Institute of Technology
Bengaluru, Karnataka
shivani.aol16@gmail.com

Shubhashini R
Dept of Computer Science
K S Institute of Technology
Bengaluru, Karnataka
shubhashinir05204@gmail.com

Vijayashree N R
Dept of Computer Science
K S Institute of Technology
Bengaluru, Karnataka
123vijayashree@gmail.com

Mrs Beena K
Assistant Professor
Dept of Computer Science
K S Institute of Technology
Bengaluru, Karnataka
beenak@ksit.edu.in

Abstract-Salesforce is the world's #1 customer relationship management (CRM) platform. It helps in marketing, sales, commerce, service and IT teams work as one from anywhere- so you can keep your customers happy. The main purpose of Einstein bot is to interact with customers quickly and accurately without waiting for a human agent. Einstein bots can send messages, ask questions and perform the actions based on the rules defined or based on the customer input. Einstein Agent chatbots, built natively on the Salesforce Platform, will allow any company to deliver automatic service at scale using Einstein AI technology.

Key Words: NLP (Natural Language processing), NLU (Natural Language Understanding)

1. INTRODUCTION

Salesforce is the Customer Relationship Management (CRM) with a cloud-based platform. It also provides applications based on customer service, marketing, analytics, and application development. The main service is the cloud-computing. Artificial Intelligence (AI) has integrated in our daily lives with creation of intelligent software/hardware, which we call as agents. These agents can do a variety of tasks ranging from labor work to difficult operations which normal humans can't possibly achieve. A chatbot can be considered as a typical example of an AI system. It can also be called as smart bots, digital assistants, interactive agents. Mainly, a chatbot is a computer program that initiates a conversation between the human and the agent through voice commands or text chats. This project aims to build a new technology that help people create better jobs and communities. Salesforce Einstein bots are NLU based technology which trains chatbot to create a learning model which helps for interactions in chat window. The chatbots are now popular because there are many advantages of chatbots for users and developers. Since there is a greater accessibility to this technology, so the chatbots are available on mobile devices.

2. LITERATURE SURVEY

Recruitment Chatbots [1]

Recruitment Chatbots mainly focusses on how chatbot behaves as human conversational partner using Goal oriented and general conversational dialogue system. This ensures Time and energy consumption. It also ensures the usage of bot characteristics in order to build it, train it and test it.

Artificial Intelligence based Chatbot [2]

Artificial Intelligence based Chatbot mainly focusses on executing web based chatbot using Pattern matching algorithm. It speeds up setting and in commencing the meeting. It also ensures high efficiency. It acts as effectual progressive tool for communication concentrating on conversational relations.

Implementation of Chatbot using AI and NLP [3]

Implementation of Chatbot is done using Artificial Intelligence and Natural Language Processing algorithms. It ensures higher efficiency. The outcome provides user interface which answers all the queries. It provides answer to the query of the user very effectively.

Intelligent Chatbot [4]

Intelligent Chatbot is mainly focused on understanding the concept of individual involved and user end goal. The technique used is Chat conversation via text or text-to-speech. There is a greater accessibility because of Intelligent Chatbots. The outcome ensures the Chatbot functions live in communication platforms like Facebook, Messenger, Skype etc.

Cloud methodologies for a seamless integrated Chatbot [5]

Amazon lex is a methodology that is used as a service for constructing conversational interface into any application using voice and text. Cloud methodologies chatbot is mainly focused on connecting Amazon connect to Amazon pinpoint to send SMS. Performance ensures One click deployment, cost effective, easy to use and seamless AWS integrations. It connects users over the platforms like email, SMS, push or voice.

An Overview of Chatbot Technology [6]

The chatbots have evolved rapidly and democratized in every industry including marketing, education, healthcare, entertainment etc. AI is integrated in our daily life which can do variety of tasks. These can be called as Intelligent agents. It uses NLP methodology to converse through text or voice. The Chatbots are platform-independent. Multiple conversations can be done in parallel along with group conversation. It is reliable, fast, dynamic interface.

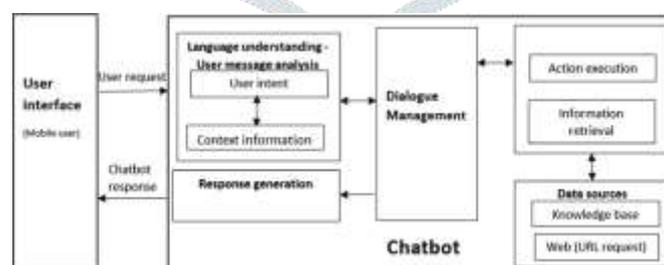


Fig 1. Chatbot Architecture

3. HISTORY OF CHATBOTS

- **Turing Test, 1950:** It questions on whether machines can think and was asked in “Computing Machinery and Intelligence” in 1950. The test has to determine which player was a human or a machine through a set of questions.
- **ELIZA, 1966:** The first machine capable of speech using NLP. Eliza Doolittle fooled many people into believing they were talking to a human.
- **PARRY, 1972:** A more conversational chatbot than ELIZA using a model of a person with schizophrenia to help increase believability in response.

- **Racter, 1984:** The artificially insane raconteur wrote the book 'The Policeman's Beard' but the bot was never released publicly.
- **ALICE, 1995:** Artificial Linguistic Internet Computer Entity (A.L.I.C.E) or Alicebot is a NLP chatterbot who won Loebner three times.
- **Siri, 2010:** First came to the public attention in Feb 2010 as it was launched as iPhone app. Voice applications was brought into market in Oct 2011.
- **Alexa, 2015:** Alexa caught user attention as a smart home-speaker.
- **Cortana, 2015:** An intelligent personal assistant developed by Microsoft. It recognizes voice commands, set reminders, answer questions using Bing search engine.

4. OBJECTIVES

- The main objective of the project is to provide a single community which can be used by any number of users.
- Save time and money.
- Easy to query.
- Giving opportunity for those who have knowledge in new technologies
- Boost operational efficiency while offering convenience and service to customers.
- Reduce people-to-people interactions with users.
- Easily resolve queries and issues, direct the complex issues to the agent.
- It is available 24/7.
- Use this technology as a tool to attract and hire the best talent.

5. METHODOLOGIES

The main methodologies used are:

- NLU (Natural Language Understanding) and NLP Technology (Natural Language Processing).
- NLU is AI that uses computer software to interpret text and any type of unstructured data.
- NLU can digest a text, translate it into computer language and produce an output in a language that humans can understand.
- NLP is an applied artificial intelligence (AI) program that helps our chatbot analyse and understand the natural human language communicated with user.
- For an Einstein Bot to become more conversational, NLP provides a more natural approach to identify customer intentions.
- NLP focus on processing the text, NLU focus on extracting the content and intent.

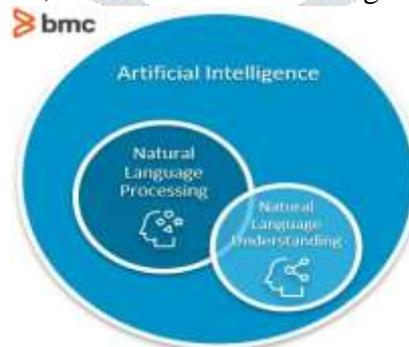


Fig 2. NLU and NLP



Fig 3. NLP Player

6. LANGUAGES USED

- **Apex:** Apex is a programming language which is similar to Java and C#. It is a case-insensitive, object-oriented language. Apex can be used to execute buttons and links, event handlers. It has limitations as it a multitenant nature of platform. Salesforce provides a series of asynchronous processing methods for Apex to allow developers to produce longer-running and complex code.
- **LWC:** LWC is a new programming model which is flexible. The advantage of LWC is its speed, security and lightweight nature. It is a modern lightweight framework built on web standards. It is based on Document Object Model element created through reusable code. It is used to generate dynamic interfaces without the use of JavaScript. Salesforce had introduced LWC to help clients to ramp up to the developers for their projects.

7. APPLICATIONS

The main benefits of the chatbot are:

- Quick case deflection: The bots can immediately answer the queries. They can handle any type of simple cases
- Reduced wait time: Users spend less time waiting for the answer. Immediate answer is obtained in the chat window.
- Saved time for agents: Since bots can deflect easy case, agents can concentrate on complex issues.
- Efficient redirects for customer inquiries: Bots welcomes the user with a greeting in a chat window and direct them to resources.
- Intelligent response through NLU: Bots with NLU technology learns how to respond to users appropriately.

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