To, IITD-AIA Foundation of Smart Manufacturing

Subject: Weekly Progress Report for Week 1

Dear sir, Following is the required progress report to the best of my knowledge considering relevant topics to be covered.

What's happening this week:

- Implementation of basic rule-based approach having tags like hello, bye, and some other basic Q&A.
- FSM Website scrapping for collecting info regarding the site.
- Pre-Processing the data i.e., scrapped out from site.
- Tokenization and stemming of messages/questions
- Learning Deep-Learning Concepts for further implementation

My understanding of INTP23-ML-01: CHATBOT for FSM

Scope: In the Chatbot for Site, I will try to scrape out all important info from website and according to the questions of users , it will provide best possible and accurate answers and it should follow the upcoming check points analyze user queries and understand user messages, provide answers to the messages of the user accurately, provide all information about the updated activities and save their time from searching on website and google search the information, provide answers accurately as much as possible, i.e., instead of providing irrelevant information, its' better to admit that bot is not able to understand the question.

Solution: In this, concept of deep learning either Pytorch or Tenserflow will be used along with some other libraries like spaCy, and one for scrapping the data on the website or using some Rule based approach.

Approach: Rule-based approach will be used for most common questions like hi, hello, bye. And web-scraping the data in order to give website related answers. For, tokenization nltk or spaCy will be used and for main process of mapping most-accurate answers Tenserflow or spaCy will be used.

WEEKLY PROGRESS:

June 5, June 6:

I was busy with the Level 2 Assignment only, Here I applied K-Means on June 5, and PCA on June 6.

June 07:

I watched the deep -learning introductory videos.

June 08:

Chatbot project got allocated to me and I went through documentation and again watched some videos wrt framework, I got idea about Natural Language Processing and spaCy where I learnt about Container, and particularly doc, in those tokens (words, punctuation). Sentence Boundary Detection i.e., identification of sentences in a text, & how to deal with generators error and tokens i.e., iterators of doc objects.

1. Learnt about the project objective, that chatbot needs to be developed like ChatGPT, or WhatsApp, or web based.
2. Learnt about NLP (Natural Language Processing) and spaCy which is used for extracting out sentences, attributes like punctuation, word that will be useful for extracting out information/query of interactor or user.

June 9:

I got better idea about spaCy and how to extract on the basis of Patterns and how to find similarity between sentences and extract most similar words ,also how to match on the basis of verbs .Also, today I started with RASA framework where I studied how basic chatbot work and how the words and questions are mapped in order to provide most appropriate answers.

1.Learnt the basic objectives of chatbot application.

- analyze user queries and understand user messages.
- provide answers to the messages of the user accurately
- provide all information about the updated activities and save their time.
- Provide answers accurately as much as possible.

2.Went through web- scraping and rule-based approach for data.

June 10:

With rule-based approach we just have directed or specific chats that is possible with bot it is something like basic chat-bot using RASA Framework. However, when we apply Tenser Flow deep learning concept is applied and it will be more diversified chat system as it will learn from old pattens. Also learnt basic requirements like domain file, data file (one for stories, one for NLU, one for rule), config file. In domain file, we have various entities like Response, Intent,

slots, Entities, Form and Action. Therese are stories to teach the bot what to do next in sequence. Also, there are channel base response.

Did some Rule-based approach where we reply to greetings and chat-ending phrases like bye.

June 12:

1. Learnt the basic objectives of chatbot application.
   - analyze user queries and understand user messages.
   - provide answers to the messages of the user accurately
   - provide all information about the updated activities and save their time.
   - Provide answers accurately as much as possible.
2. Went through web- scraping and rule-based approach for data.
3. Learnt the basic objectives of chatbot application, analyze user queries and understand user messages, provide answers to the messages of the user accurately, provide all information about the updated activities and save their time from searching on website and google search the information, provide answers accurately as much as possible, lie instead of providing irrelevant information, its' better to admit that bot is not able to understand the question.
4. I went through web- scraping and rule-based approach for data collection. Rule -based would have some basic evergreen questions like introduction and ending chat while web-scrapping will answer the queries relate to website.