**Enhancing MSBAIS Business Processes with ChatGPT: A Data-Driven Approach**

***Executive Summary*:** The main goal of the project is to develop a CHAT GPT-based chatbot for automatically responding to questions from current and incoming MS BAIS students and providing them with the necessary information, contacts, and guidance to address their concerns. We have uncovered several bottlenecks and areas where a ChatGPT-like interface can significantly improve the current MSBAIS business process landscape through a thorough analysis. These include automating routine administrative tasks, offering real-time academic advising, and streamlining the course registration process. However, certain limitations must be acknowledged, such as the requirement for continuous data updates and user training.

***Business Process Analysis***: In the current MS BAIS business process, a repository of approximately 5,000 Jira ticket templates serves as the foundation for handling student queries. These templates are employed to match incoming questions or emails from students based on specific keywords, facilitating the retrieval of predefined responses. Each ticket includes essential information such as the student's email ID, their inquiry, and the response provided by the advisor or supervisor. This can be served as the Knowledge base for the chatbot for information retrieval. However, when a student's question doesn't align with the existing templates, a new Jira ticket must be generated, adding complexity to the support process. Notably, inquiries related to registration pose a particular challenge as they necessitate access to student records, contingent on obtaining the unique identifier (UID) of the student. A significant bottleneck in this workflow emerges when students fail to include their U-number in their initial emails, prompting the need for follow-up communications to request this vital information.

A ChatGPT-like user interface can significantly improve the current MS BAIS business procedure, which uses about 5,000 Jira ticket templates to respond to student inquiries. By intelligently matching incoming queries to the most pertinent Jira tickets based on natural language understanding, it can increase accuracy. Furthermore, ChatGPT can streamline the procedure by automatically creating new Jira tickets when inquiries do not fit preexisting templates. ChatGPT can prompt students to include this special identifier in their emails, addressing the issue of missing U-numbers in student emails and preventing the need for manual follow-up emails. Additionally, it can deliver individualized responses, run continuously around the clock, retrieve student records, and manage a high volume of inquiries, ensuring students receive prompt and accurate support, especially during crucial times like registration.

***Data Assessment***: The primary data available for this project consists of the repository of approximately 5,000 Jira ticket templates. These templates contain valuable information, including keywords, responses, and historical interactions between advisors or supervisors and students. The data is in the Unstructured format. The initial start-up for the project is to scrape the Jira tickets and do some data cleaning which includes refining the data and extracting the columns like keywords, Questions, Types of questions like student registration of course or the nonregistration query, response for the question, UID (Masked one) etc., removing the duplicates, and formatting the data into files like CSV files. The quality of the existing data appears to be reliable in terms of containing predefined responses and historical context for various student queries. However, it may require periodic updates to ensure that responses align with current policies and procedures. We are planning to use these CSV files with the specified columns that can serve as the Knowledge base for the chatbot.

We are planning to concentrate particularly on answering the most frequent questions from the data that we have. We will try to do the registration-based questions based on the complexities that we will analyze.

***Scope of Use***: The current business process is serving the responses but involves human intervention for asking some specific questions and getting the response, especially in scenarios where the student is asking questions about course registrations on-campus student employment, and distribution of credits for CPT, OPT, etc. It is also a time time-consuming task and involves getting the student records if they did not provide the UID and involves the cost of handling emails and the Jira tool. If we use the chatbot It can somehow make the user user-friendly and quite efficient in responding to the questions and reduces the burden for the supervisor which simplifies the job.

The challenge or Limitation here is the policies will be changing from year to year so it won't give correct responses for the updated changed policies. However, with the knowledge that we trained, it could only be able to give those responses. However, we are planning to handle such cases by giving generic responses to such scenarios by providing the email ID to contact. The knowledge base will be useful for information extraction. However, for input to prompt, we will also be planning to add enhanced text like asking for the UID from students. Since UID is sensitive information we are planning to mask it and use it.

***Appendix***:

User send an email

USF MUMA /Advisor

Jira tickets

Based on the Key word Match

**Current Business Model**


                    A model architecture diagram of Retrieval Augmented Generation (RAG) showing how embeddings of user queries and supplemental documents are used to augment foundation model prompts to improve customization.
                

**Proposed Business model**

Step 1: The student will send the query.

Step 2: Based on the query the relevant information will be extracted from the knowledge source which will be a CSV file prepared from the JIRA tickets which we mentioned.

Step 3: Based on the keyword match and through NLU (Natural language understanding) it will retrieve the relevant information.

Step 4: We will apply text summarization with the enhanced context like asking for the uid details or email address and will send it to LLM.

Step 5: The LLM will generate the appropriate response. In case of specific questions, we will ask to mail to muma business email ID.