Project M

AI-Based virtual advising assistant

Group 16

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Abstract. Students invest a lot of their time and effort in trying to get relevant answers to their queries when they join the program like OMSCS. This project explores automated interface solutions to provide an answer to queries from students. A design for an intelligent bot solution that will understand the intent of the student's query, find the relevant information and provide the precise response designed based on previous instances of responses to similar questions.Surveys and product reviews are going to be conducted in order to gather the needfindings.

Pending: the abstract requirement is also asking to describethe prototypes, the evaluation strategies, and the salient results. -- we will revise abstract once corresponding steps are complete.

Introduction

Problem Space

It is an information management challenge when a new student joins a program like OMSCS at an educational institution which is of the scale akin to Georgia Institute of Technology. It is not only an ordeal for students who need to understand the curriculum, course structure, academic schedule, fee payment process, IT systems, personnel and communication channels. But often an even bigger challenge for an institutional institute to manage the dispersion of information which is more or less

repeated across students through diverse avenues. The current system of information retrieval is purely based on type and search parameter, where a student has to browse through myriads of webpages and faqs in order to find a piece of information. Thanks to the various social media today, that there are many general groups in slack, WhatsApp, Google plus community where the alumni from the program actively respond to the queries of the students, but still students ultimately end up reaching to their advisors seeking for the answers to their questions.

The idea behind our project is to explore the use of artificial intelligence and design a self-serving tool that makes it easy for students to get relevant answers. And at the same time help manage the load away from the teaching faculty and student administration.

User types

Any user who intends to retrieve general information regarding his or her program can be the user of this design. Here are different types of user who can use this application:

- Students who are newly admitted to the program and looking for the most common resources and information.
- A student who is already admitted to the program and have spent at least 1 semester. This type of user is different from the one defined above as the student here already knows a lot about the program but still need general information like “when will be the time ticket open?”, “when is the test date for my course CS-1234?”
- Any user outside the program, who are looking for the very basic piece of information like, “what is the admission process for the MSCS?”, “When are the deadlines for the fall 2018 admission?”,”when will be the admits rollout?”
- Advisors or users who want to add an answer or update information which can be made available for the general users.

Needfinding Planning

In order to gather a comprehensive understanding of the common queries that students have while enrolling to the OMSCS program and queries that may arise during the course of the program, few needfinding exercises would be done as part of the initial phase of the design life cycle.

Needfinding Plan 1 - Survey

The first needfinding plan that would be taken up is the 'Survey'.

What would be asked?

Following kinds of questions would be asked while carrying out the survey to understand the challenges faced by students while searching for queries related to the program:

1. Select your age group?
2. Are you a Georgia Tech student?
3. Are you OMSCS student?
4. When did you matriculate?
5. How difficult would you consider your onboarding to the program?
    a. Very difficult
    b. Difficult.
    c. Neither easy not tough
    d. Very easy
6. Please select the platform you used mostly for information retrieval from the program?
    a. Georgia tech official website
    b. Google plus community
    c. Whatsapp
    d. Telegram
    e. Reddit
    f. Advisors
    g. Other

7. How much time do you think you spend on an average on the platforms above you selected for searching the answer of your query?
8. If you mark "Other" as part of the previous question, please tell us which platform you used?
9. On an average for each query, you had when you admitted to the program, how much time do you think it would have taken for in retrieval of that query?
10. Do you think a lot of questions in many forums are repetitive or duplicate in nature, like for example: when is the time ticket available?
11. If you are in your 2nd or 3rd semester, how easy you think now is for you to retrieve general information regarding your exam, course registration, the fee is?
12. How often it has happened to you that, you tried to find an answer for a query and you could not find it and ultimately you had to mail you advisors for that, for example, you are looking the process to submit the official transcript and you find varied answers in different platforms, so finally decided to reach out to the advisors?
13. Which AI assistant do you generally use in your day to day tasks?
    a. Google home mini
    b. Alexa
    c. Cortana
    d. Others
    e. None

The survey would be sent to the students who would like to seek admission to the OMSCS program, those who are in the process of admission and the students who are already into the program.

Data Inventory

Who are the users? The first few questions will be based on to know the gender, age of the students. We are expecting that users will be newly admitted students who are currently enrolled in the OMSCS or On-campus program.

Where are the users? Since OMSCS course is an online course, so the audience for the survey will be distributed globally many countries.

What are their goals? Survey questions are designed to assess the current experience of the student on how easy or difficult it is for them to retrieve any sorts of information regarding the project. This information will help us in determining what task we need to improve or smoothen in order to design a better virtual assistant.

What do they need? They will need internet connectivity and a system or mobile device using which they can answer the survey questions.

What are the task and subtasks? Questions related to the user's experience for information retrieval after they get admitted to the program, and on a more granular level what specific information they feel difficult to retrieve or is duplicate information.

Potential Biases

Some common biases that can be encountered, are discussed below along with possible ways in which the impact of these biases can be limited:

1) **Social Desirability Bias:** Here, there is a tendency that the participant responds to a question by providing a socially acceptable response instead of providing a true response. This would be taken care of by framing questions in such a way that possible design solutions are not conveyed or revealed through survey questions.
2) **Choice-Supportive Bias:** Usually respondents tend to agree and respond positively to any question in the survey. This would be minimized by decreasing the yes-no kind of questions and instead have respondents select from alternatives or choose from a ranking.

Needfinding Plan 2 - Analysis of Product Reviews

For developing a suitable intelligent tool to address the students' problems in getting appropriate responses to the queries they have regarding the online course, we would look at user reviews and see what people already like and dislike about

existing products. In this way, we would be able to find out what the candidates require and what their common complaints are.

Where will the reviews be found?

There is hardly any chatbot/AI based app that does the same task as we intend to do, and still, we have a lot of other apps from where the motivation can be leveraged to get the needfinding for the user's asks in an Interface. We would be using Product hunt[1] and Google reviews for a few of the apps that work or aligns to our idea. The most commented post on product hunt have been sorted and the apps have been gathered from where the qualitative analysis can be done for the products.

- A lot of data can be obtained from the Product Hunt website but the correct apps/ bots that align to our idea need to be figured out.
- AdmitHub's[2] text message platform integrates artificial intelligence with human expertise to give students 24/7 access to personalized guidance as they apply, enroll and advance through college. They embody the collective knowledge and unique spirit of the school community, helping students to :
    - Connect with Students
    - Drive key metrics
    - Increase staff efficiency

How will the reviews be examined systematically?

[1] https://www.producthunt.com/posts/landbot-io-conversational-landing-page
[2] https://www.admithub.com