Broncobot

A Chatbot for Santa Clara University

Capstone Project Guided by,

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Presented by,

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Problem Statement

To develop an automated and interactive chatbot system for Santa Clara University LSB to reduce the efforts required by students to get any university related information.

Hi!

How can I help you today?

Current Scenario

- ★ Overwhelming amount of information
- ★ Longer navigation path
- ★ Need to spend a lot of time to find exact answers
- ★ Slow response time due to high staff inquiries

Our Solution

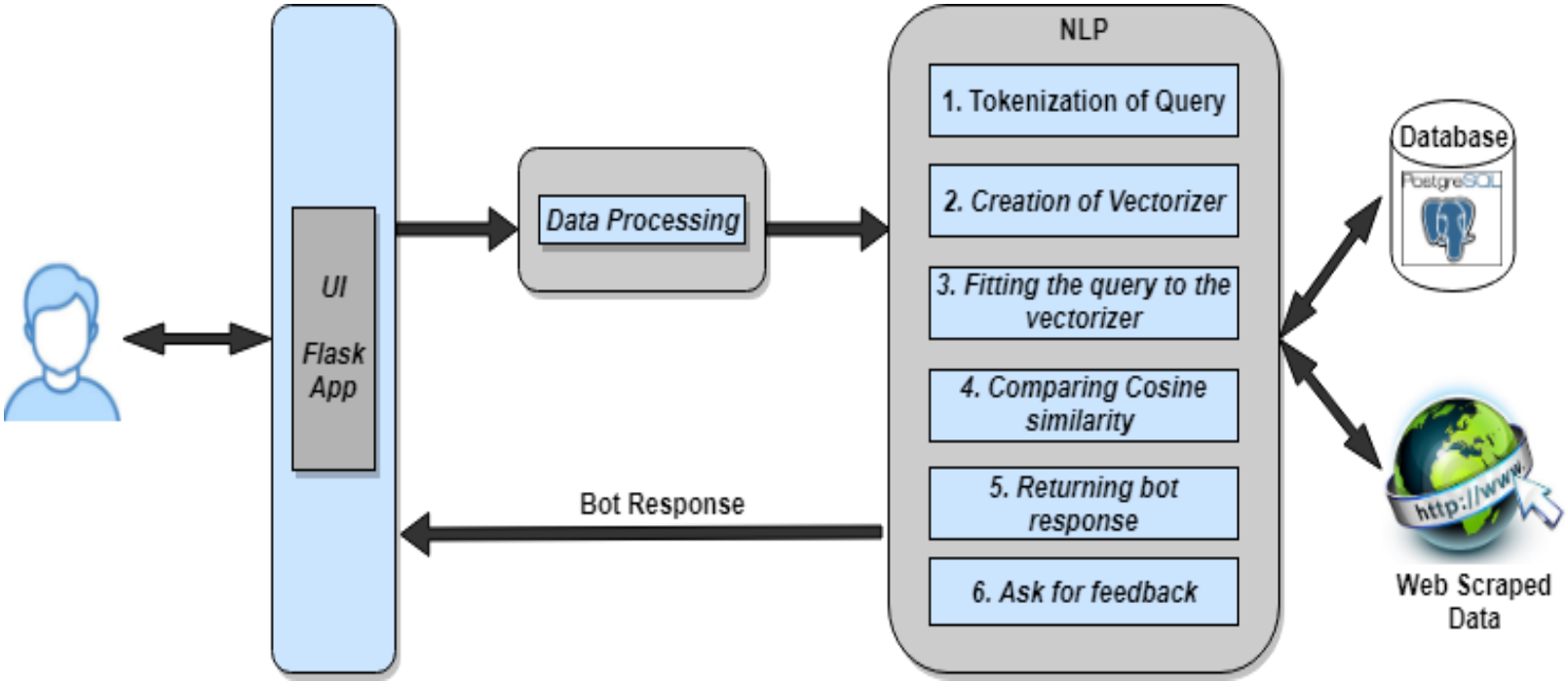
Hi!

How can I help you today?

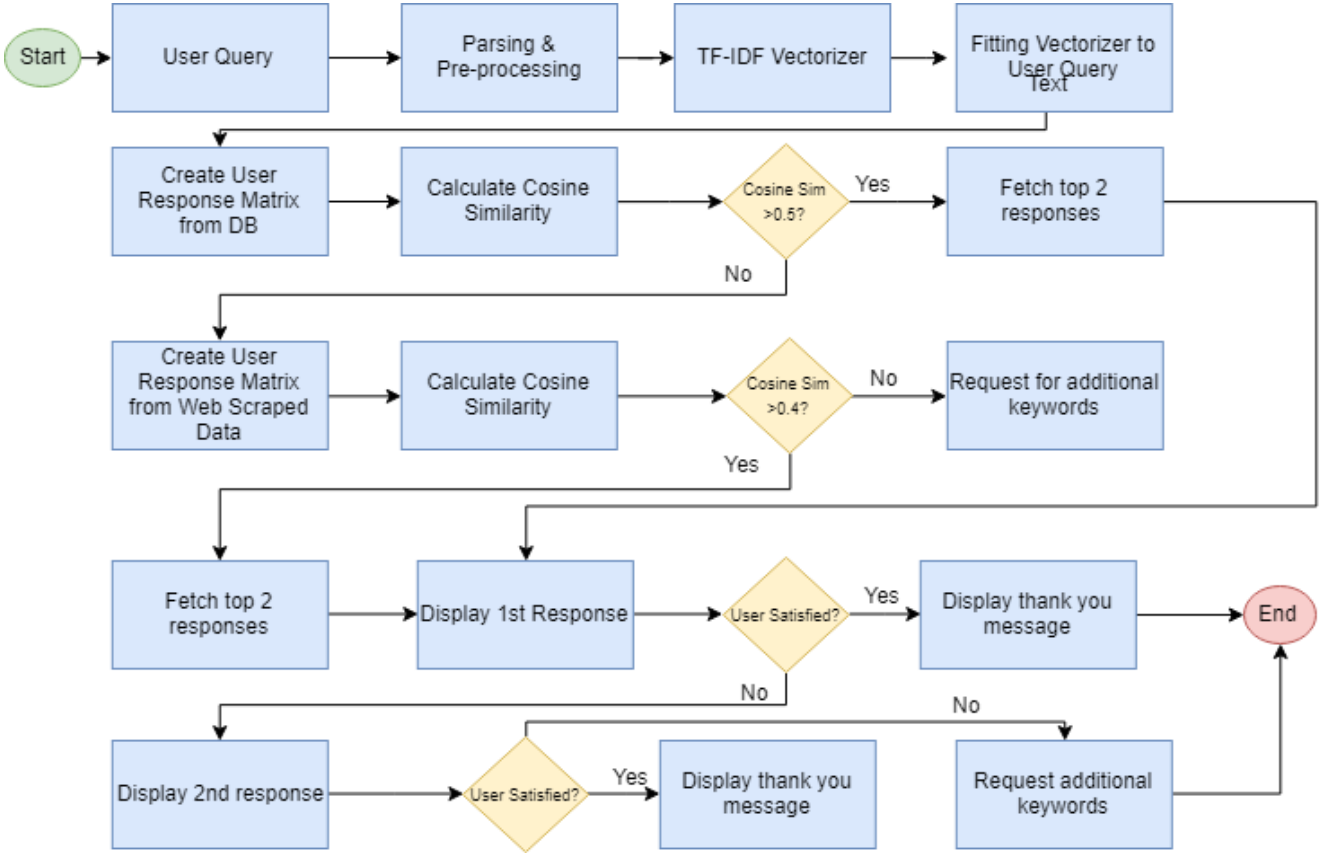
When is the MSIS Fall deadline?

The MSIS priority application deadline for Fall 2019 quarter is on 5th Jan, 2019 while regular deadline is on 31st March.

System Architecture



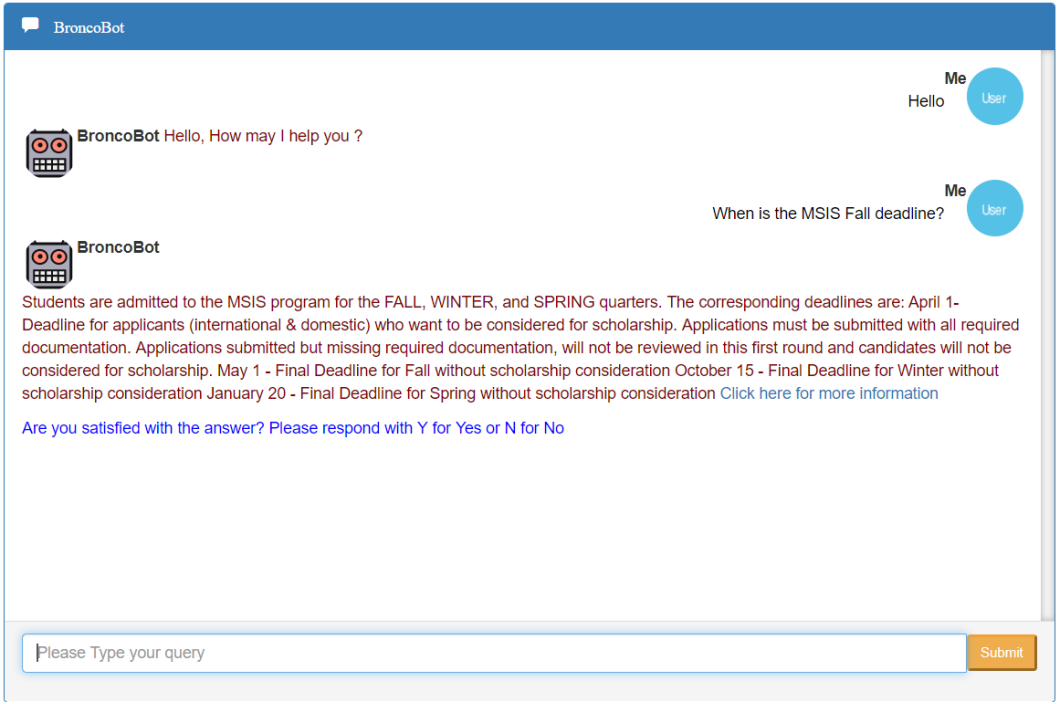
System Flow


Start
User Query
Parsing & Pre-processing
TF-IDF Vectorizer
Fitting Vectorizer to User Query Text
Create User Response Matrix from DB
Calculate Cosine Similarity
Cosine Sim >0.5?
Yes
Fetch top 2 responses
No
Create User Response Matrix from Web Scraped Data
Calculate Cosine Similarity
Cosine Sim >0.4?
No
Request for additional keywords
Yes
Fetch top 2 responses
Display 1st Response
User Satisfied?
Yes
Display thank you message
End
No
No
Display 2nd response
User Satisfied?
Yes
Display thank you message
Request additional keywords

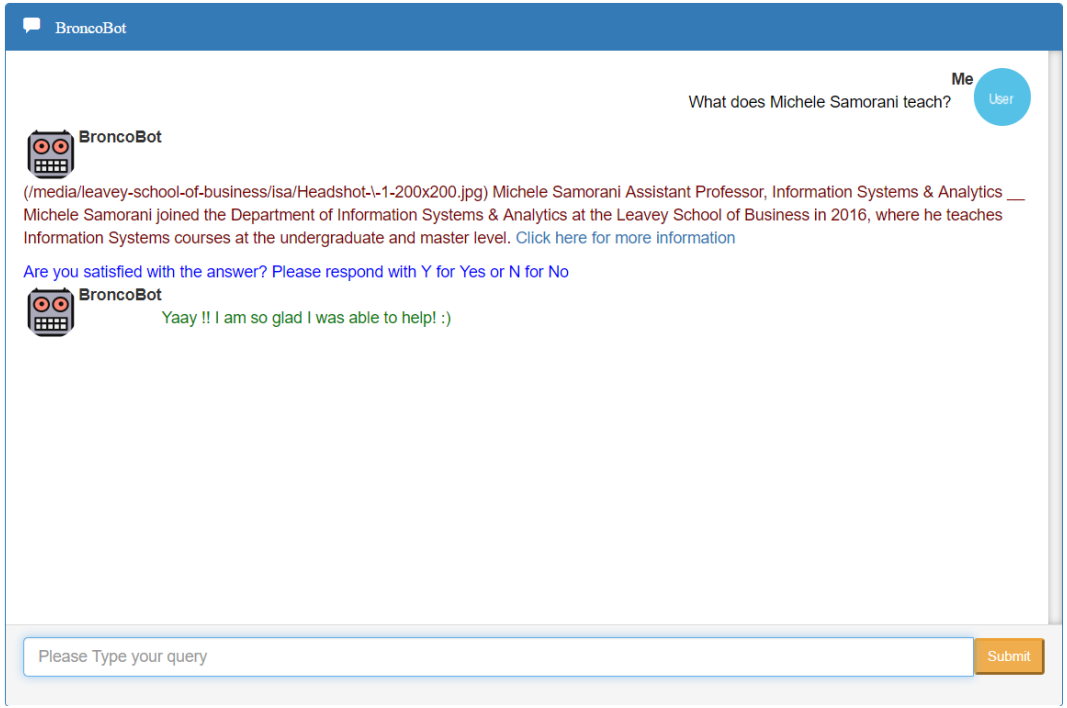
Let’s look at the demo..

Can’t wait to talk to you!

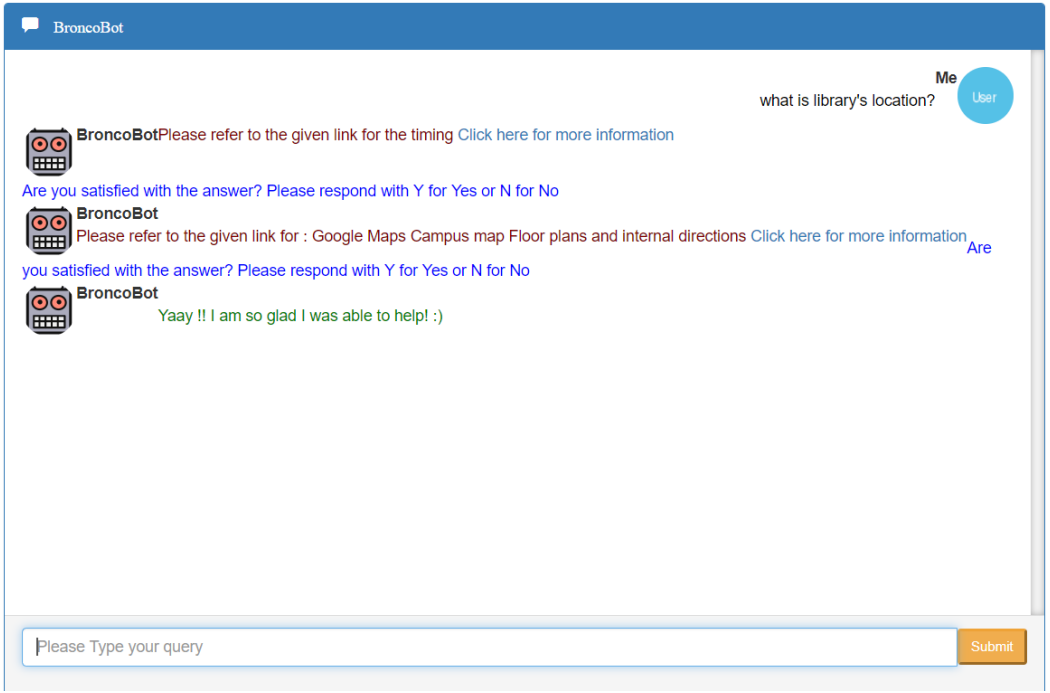
Results


BroncoBot
Me
Hello
User
BroncoBot Hello, How may I help you ?
Me
When is the MSIS Fall deadline?
User
BroncoBot
Students are admitted to the MSIS program for the FALL, WINTER, and SPRING quarters. The corresponding deadlines are: April 1- Deadline for applicants (international & domestic) who want to be considered for scholarship. Applications must be submitted with all required documentation. Applications submitted but missing required documentation, will not be reviewed in this first round and candidates will not be considered for scholarship. May 1 - Final Deadline for Fall without scholarship consideration October 15 - Final Deadline for Winter without scholarship consideration January 20 - Final Deadline for Spring without scholarship consideration Click here for more information
Are you satisfied with the answer? Please respond with Y for Yes or N for No
Please Type your query
Submit

Results


BroncoBot
Me
What does Michele Samorani teach?
User
BroncoBot
(/media/leavey-school-of-business/isa/Headshot-\-1-200x200.jpg) Michele Samorani Assistant Professor, Information Systems & Analytics __ Michele Samorani joined the Department of Information Systems & Analytics at the Leavey School of Business in 2016, where he teaches Information Systems courses at the undergraduate and master level. Click here for more information
Are you satisfied with the answer? Please respond with Y for Yes or N for No
BroncoBot
Yaay !! I am so glad I was able to help! :)
Please Type your query
Submit

Results


BroncoBot
Me
what is library's location?
User
BroncoBotPlease refer to the given link for the timing Click here for more information
Are you satisfied with the answer? Please respond with Y for Yes or N for No
BroncoBot
Please refer to the given link for : Google Maps Campus map Floor plans and internal directions Click here for more information Are you satisfied with the answer? Please respond with Y for Yes or N for No
BroncoBot
Yaay !! I am so glad I was able to help! :)
Please Type your query
Submit

Challenges Faced

- ★ Unfamiliarity with front-end technology stack
- ★ Unavailability of sample data
- ★ Long learning curve to understand and implement NLP
- ★ Challenges with unit and integration testing

Limitations

- ★ Application is limited to use within Leavey School of Business
- ★ Any changes made on the website has to be manually updated in database
- ★ Increased latency due to manual web scraping

Future Scope

- ★ Increase accuracy of the chatbot by gathering more training data
- ★ Include latent semantic analysis
- ★ Store question answer pairs for which the user gives a negative rating.
- ★ Develop machine learning model which will learn to alter responses based on user feedback
- ★ Extend the use of application beyond Leavey School of Business
- ★ Extend the use of application for university staff and current students

THANK YOU!