Department of Computer Science & Engineering

UE17CS355 – Web Tech II Laboratory

Project Evaluation

Project Title   :   **Content-Based Research Paper Recommendation and Analytics Engine**

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As a part of our WT-2 Project we made a Content-Based Recommendation Website to retrieve the top 10 papers for any specified topic.

Our UI takes a "topic" as an input from the user and sends an XMLHttpRequest to the server, where the trained model produces the recommendation and returns it back to the UI along with 2 histograms.

The first histogram shows the "Paper published related to the topic per year" and the second histogram shows the "Top author and number of papers".

We use submission throttling to fetch the results after the user types any character. The request goes to the server which uses RESTful API through Flask to get the results and returns it back to the Browser(Client).

For **Front-End**, we are using **Vue JS Framework** which is an open-source Model–view–viewmodel JavaScript framework for building user interfaces and single-page applications.

For **Back-End**, we are using **Flask Framework** which is a micro web framework written in Python. It is classified as a microframework because it does not require particular tools or libraries. It has no database abstraction layer, form validation, or any other components where pre-existing third-party libraries provide common functions.

We have also used Bootstrap and Bulma CSS to make the website look more cleaner and better.

The techniques implemented are:
1. AJAX Pattern: (Submission Throttling)
    We used submission throttling to fetch the top 10 recommended papers from the server after the user types in any character.

2. RESTful API:
    Using Flask, we used the RESTful concepts to run the recommendation model and retrieve the results that are then sent back to the browser.

For **Intelligent Component**, we are using a **Content-Based Recommender model** trained on ARXIV dataset to provide the recommendation of the top 10 results along with 2 histograms for year and author statistics generated using matplot library in Python.

So every time there is an XHR request sent from the browser, the flask app receives the request and performs the appropriate action using the RESTful concept, runs the Recommendation Model to produce the recommendations by using the pre-calculated vector for content based recommendation, and sends it back to browser.

Thank You