

# **ABSTRACT**

## **Title:** Recommendation System for Restaurants in Hyderabad

The exponential growth of restaurants in Hyderabad has made it increasingly difficult for users to select dining options that match their preferences. This project proposes a content-based restaurant recommendation system tailored specifically for Hyderabad, addressing the challenge of offering personalized dining suggestions to users. By utilizing user preferences such as cuisine type, ambiance, price range, and dietary requirements, the system will analyse the content attributes of restaurants to generate recommendations that closely match individual tastes.

To implement this system, data will be collected using web scraping techniques (HTML parsing, RegEx, APIs, Selenium) from online restaurant directories, review platforms, and food delivery websites. The scraped data will include detailed restaurant information like cuisine type, pricing, customer ratings, and reviews. The **Content-Based Filtering Algorithm** which includes **TF-IDF, Cosine Similarity, KNN algorithms** will match these attributes with user profiles, which are constructed based on their preferences and interactions. The system will utilize generative AI (**Data Augmentation, NLP**) to augment the dataset and fill in missing values, ensuring that even less popular restaurants are included in the recommendations. For creating a user interface to interact with the recommendation system Streamlit or Flask will be used and AWS, Google Cloud, or Azure for hosting the application and database.

By employing web scraping, Content Based Filtering and generative AI, the system will generate personalized restaurant suggestions that align with the specific tastes of users, even those with limited interaction history. This solution will provide a highly tailored dining experience for users in Hyderabad, enhancing satisfaction and discovery in the ever-growing restaurant landscape.