Project Proposal Group-45

Guess it! An Online Multiplayer Trivia

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1 Objective

The objective of this project is to create a web application that is a game where the players guess the movie according to the pictures provided by the system that is based on the movie description.

2 Rationale

Some games are better when played with friends, and this sure is one of them. Pictionary, a fun filled game primarily inspired from charades. Meeting our dearest ones has become a hassle for several reasons be it the lockdown, or the geographical inconvenience that makes it troublesome to catch up. We wanted this to be the rendezvous where they meet up and have fun virtually.

3 Solution Approach

The development of this application involves different phases, from the creation of the data set to deployment on the cloud. Following are the different techniques, tools, and technologies involved in various stages of application development.

3.1 Creating a Dataset

Our Application requires two datasets. The first Dataset is the details of the movie, like name, cast & crew, genre, a short description, etc. This Dataset will be retrieved using Web Scraping instead of taking old datasets, which helps maintain the latest data. Furthermore, the second Dataset would contain general images used to describe the keywords extracted from the movie descriptions presented. Both the datasets will be created from scratch.

3.2 Developing the Game Engine

The two main functionalities involved are assigning keywords to the objects' images, extracting the keywords from a text description of a movie/series, and matching them with the most relevant images from available images. Here two main concepts - Image-captioning and Text-analysis(keyword extraction) will be engineered.

3.3 Building a Web-app

We want to launch the game engine we develop using a web application. While building a web-app we face challenges like User Interface Design, Security, Performance, Scalability, etc.

- Backend - Database connection, Communication between the systems and the users
- Frontend - GUI design, Connection to backend

3.4 Deploy and Maintenance

As a final step, deploy the web app on a cloud platform and create a distributive environment to allow Player vs. Player and Team vs. Team modes with real-time interaction(chat) among the players in a team. We also plan to automate the development, scaling, load-balancing, and management using orchestration tools like Kubernetes.

4 Timeline

Here is a bulleted timeline of when each phase's tasks will get completed.

Timeline of Project	
Phase 1 (Dataset Creation)	
Raw image collection and processing	Jul'22
Movie/Series Description collection through web-scrapping	
Document the whole process and Paper publication	
Phase-2(Developing the Game Engine)	
Image-captioning of generic-object images	Aug'22
Keyword Extraction through text Analysis	
Phase-3(Building a Web-app)	
GUI development	Sept/Oct '22
Setting up communication over Client-Server machines	Sept '22
Back-end and DB and GUI Linkage	Oct'22
Phase-4(Deploy and Maintenance)	
Deploy the web-app on cloud	Nov'22
Remote Testing and Scaling	Dec'22
Documentation and Paper	Jan'23

5 Challenges and Possible Issues

- We need to hone relevant skills in order to put forth what we visualized.
- Since we are creating our dataset with open images, it is a hurdle to gather licensed images and make our dataset publicly available.
- Pertinent knowledge about Web app Development, Game Engine and UI Designing techniques, and sorting out the issues faced.
- Possible charges for Cloud services.

6 References

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