CAD_PHASE 1

IMAGE RECOGNITION

PROJECT DEFINITION:

The project aims to develop an image recognition system using IBM Cloud Visual Recognition. The primary objective is to develop a platform where users can upload images, and the system accurately classifies and describes their contents. This will enable users to craft engaging visual stories with the help of AI-generated captions, enhancing their connection with the audience through captivating visuals and compelling narratives.

WORKFLOW:

1.Image recognition setup

2.Designing user interface

3.Image classification

4.Caption generation

5.User engagement features

1.Image recognition setup:

Sign up for IBM cloud account and create a visual recognition service instance and obtain necessary API keys. Gather a dataset of elements which is iverse and well labeled. Train a custom classifier using IBM cloud visual recognition. If necessary pre-trained models for general image recognition avilable in IBM cloud visual recognition can be utilised.

2.Designing user interface:

Designing a user interface (UI) involves creating an intuitive, visually appealing, and user-friendly layout. This helps the users to upload images and

view the AI generated captions. Interface must maintain consistency in layout elements and navigaton menus across pages.

3.Image classification:

Implement the image classification process using the IBM Cloud Visual Recognition API. The API key and the API endpoint URL provided by IBM cloud is noted down. Image is made accessible and stored on the web. Python script is used to POST request to IBM Cloud Visual Recognition API endpoint. The script will send a request to IBM Cloud Visual Recognition API and will classify the image accordingly. It must be made sure to handle errors and edge casses in the code, such as when the service doesn't recognize any objects in the image .

4.Caption generation:

Generating captions for images using AI involves leveraging advanced machine learning models. Pre-trained convolutional neural networks(CNNs) can identify objects, scenes and patterns within images. Recurrent neural networks(RNNs) can be used for generating natural language captions. Each image should have one or more descriptive captions. Train the models to learn to associate the extracted image features with appropriate captions. Pass the new image through the image recognition model to extract features. Feed the extracted features into the trained captioning model to generate descriptive captions for the image. Integrate the trained captioning model into the application which allows the users to generate captions for uploaded images

5.User engagement features:

This step involves designing of features which allows the users to explore, save, and share their alenhanced images. Allow users to create profiles, add friends, follow others, and engage in social interactions within your platform. Conduct polls or surveys to gather user opinions and preferences, making them feel involved in the decision-making process. Create discussion forums or

message boards where users can discuss topics related to platform. Display in-app notifications for updates, messages, or interactions within the platform. Collect feedback from users about their experiences, preferences, and suggestions for improvement. Improving the user engagement features can lead to increased user retention , satisfaction , and advocacy for the platform.

Innovation:

It is considered to incorporate sentiment analysis to generate captions that capture the emotions and mood of the images. This will enable users to craft engaging visual stories with the help of AI-generated captions, enhancing their connection with the audience through captivating visuals and compelling narratives.