Virtual Designer Final Project Documentation

Overview

This project is designed to analyze images for fashion recommendations. It leverages computer vision and image processing techniques to determine the facial features, skin color, and other personal characteristics of individuals. Based on this analysis, it suggests clothing items that would complement the user's features.

Dependencies

The project relies on several Python libraries:

numpy: For numerical computations and operations.

cv2 (OpenCV): For image processing and computer vision tasks.

dlib: For facial feature detection.

matplotlib: For plotting and visualizing images (used in the notebook for demonstration purposes).

Color Analysis

Implements a function analyze_color to analyze color properties within specified image regions.

Face Shape Determination

A function determine_face_shape that calculates the user's face shape based on detected facial landmarks.

Color Processing Utilities

Defines a color name to BGR (Blue, Green, Red) value mapping.

Includes functions for calculating color distances and finding the nearest named color.

Mock Data and Recommendations

Contains mock image data and a function fetch_clothes to fetch clothing recommendations based on analyzed features (face shape, eye color, hair color, skin color).

Display Recommendations

A function display_recommendations_in_notebook for visualizing recommendations within the notebook.

Feature Detection and Recommendations

detect_features_and_recommend function to process an image, detect features, and display fashion recommendations.

Main Function

The main function serves as the entry point for user interaction, asking for an image path and utilizing the above components to generate recommendations.