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get_file_paths(directory):

This function receives a directory path as an argument and returns a list of all file paths in the specified directory.

save_as_numpy_array(data, path):

This function saves a given data into a .npy file at the specified path. It returns the path of the saved .npy file and the data type of the saved data.

load_image(image_path):

Loads an image from the specified image_path using OpenCV's imread() function and returns the loaded image and its extension.

get_image_dimensions(image):

Takes an image as an argument and returns its dimensions (height, width, and channels).

compute_color_histogram(image):

Computes the color histogram of the specified image and returns the normalized histogram.

detect_edges(image):

Performs Canny edge detection on the given image and returns the resulting edge detected image.

detect_corners(image):

Performs Shi-Tomasi corner detection on the given image and returns the resulting corner detected image.

extract_features(image_path):

This is the main function that utilizes all the above functions to extract various features from an image. It loads an image from the given image_path, computes its color histogram, detects its edges and corners, saves the image and these features as .npy files, and returns tuples containing information about the image and its features.

generate_sql_inserts(num, features):

This function generates SQL INSERT statements to insert the image features into appropriate tables in a database. It takes as arguments a number (num) that is used as an ID for the image, and a tuple of features generated by the extract_features() function.

write_to_file(inserts):

Writes the SQL INSERT statements generated by the generate_sql_inserts() function to a .sql file.