Data Collection and Preprocessing Phase

Date	15 April 2024
Team ID	738181
Project Title	CRIME VISION: ADVANCED CRIME CLASSIFICATION WITH DEEP LEARNING.
Maximum Marks	6 Marks

Preprocessing Template

The images will be preprocessed by resizing, normalizing, augmenting, denoising, adjusting contrast, detecting edges, converting color space, cropping, and batch normalizing, and whitening data. These steps will enhance data quality, promote model generalization, and improve convergence during neural network training, ensuring robust and efficient performance across various computer vision tasks.

Section	**Description**
Data Overview	The dataset for this project consists of a collection of images representing various criminal incidents and scenes captured from surveillance cameras, crime scene photographs, and other sources. Each image is labeled with the corresponding crime category, providing supervision for the classification task.
Resizing	Resized images to a specified target size (224,224).
Normalization	Normalize pixel values to a specific range i.e. to /255
Data Augmentation	NA
Denoising	NA

Edge Detection	NA
Color Space Conversion	NA
Image Cropping	NA
Batch Normalization	Batch_size

Data Preprocessing Code Screenshots

Loading Data	1. Loading Kaggle.json File
	`!mkdir -p ~/.kaggle`
	`!cp kaggle.json ~/.kaggle/`
	`!chmod 600 /root/.kaggle/kaggle.json`
	2. Downloading The Dataset through Kaggle API
	`!kaggle datasets download -d odins0n/ucf-crime-dataset`
	Downloading ucf-crime-dataset.zip to /content
	100% 11.0G/11.0G [01:39<00:00, 77.3MB/s]
	100% 11.0G/11.0G [01:39<00:00, 119MB/s]
	2.1 Unzipping the Dataset
	`!unzip ucf-crime-dataset.zip`
	Streaming output truncated to the last 5000 lines.
	inflating: Train/Vandalism/Vandalism035_x264_230.png
	inflating: Train/Vandalism/Vandalism035_x264_240.png
	inflating: Train/Vandalism/Vandalism035_x264_250.png
	inflating: Train/Vandalism/Vandalism035_x264_260.png

Resizing	`image_size = (224,224),`
Normalization	N.A

Data Augmentation	`val_gen = image_dataset_from_directory(`
	`Train,`
	`label_mode ="categorical",`
	`batch_size = 250,`
	`image_size = (224,224),`
	`shuffle = True,`
	`seed =12,`
	`validation_split = 0.2,`
	`subset = "validation")`
	Found 1266345 files belonging to 14 classes.
	Using 253269 files for validation.

Denoising	NA
Edge Detection	NA
Color Space Conversion	NA
Image Cropping	NA
Batch Normalization	`batch_size = 250,`