

Data Collection and Preprocessing Phase

Date	15 March 2025
Team ID	739798
Project Title	Virtual Eye – Lifeguard for Active Swimming Drowning Detection
Maximum Marks	6 Marks

Preprocessing Template

The images will be preprocessed by resizing, normalizing, augmenting, denoising, adjusting contrast, detecting edges, converting color space, cropping, 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	We collected swimming pool surveillance footage and underwater video datasets showing various swimming activities and potential drowning scenarios. The data includes images and video frames labeled to identify human subjects, their positions, and behaviors such as active swimming or distress patterns.
Resizing	All input images are resized to a standard YOLOv3-compatible size to ensure uniformity and efficient processing during model training and inference.
Normalization	-
Data Augmentation	-
Denoising	-

Edge Detection	-
Color Space Conversion	-
Image Cropping	-
Batch Normalization	-
Data Preprocessing Code Screenshots	
Loading Data	<pre>!kaggle datasets download alanoudawaji/swimming-and-drowning-dataset Dataset URL: https://www.kaggle.com/datasets/alanoudawaji/swimming-and-drowning-dataset License(s): unknown Downloading swimming-and-drowning-dataset.zip to /content 99% 368M/371M [00:22<00:00, 16.8MB/s] 100% 371M/371M [00:22<00:00, 17.4MB/s] !unzip /content/swimming-and-drowning-dataset.zip</pre>
Resizing	-
Normalization	-
Data Augmentation	-
Denoising	-
Edge Detection	-
Color Space Conversion	-

Image Cropping	-
Batch Normalization	-