

Image Acquisition

Capture the image using a camera or sensor, typically in a raw format. The image is collected for further processing and analysis, which is essential for detecting objects within the scene.

Preprocessing

Enhance image quality to prepare it for analysis. Steps include noise reduction, normalization, and resizing, which ensure that the image is suitable for accurate object detection.

Feature Extraction

Identify and extract relevant characteristics such as edges, corners, and textures within the image. These features are crucial for detecting and recognizing objects in the next steps.

Object Recognition and Classification

Classify the detected objects into predefined categories. This final step determines what the detected objects are, using the features or patterns identified earlier in the process.

Post-Processing

Refine the detected objects by eliminating redundant bounding boxes and adjusting them for better accuracy. This step ensures that the detection results are precise and reliable.

Object Detection

Detect and localize objects within the image using specific features or deep learning models. This step involves identifying the presence and position of objects in the scene.