

Diagram illustrating a sequence of operations in a neural network architecture, likely a convolutional neural network (CNN), showing the flow from input to output layers.

The diagram shows a sequence of operations:

- Input Image** (represented by a 2D rectangle).
- Conv Layer** (represented by a 3D box) with dimensions $7 \times 7 \times 30$.
- Maxpool** operation (represented by a 3D box) with dimensions $2 \times 2 - S - 2$.
- Conv Layer** (represented by a 3D box) with dimensions $7 \times 7 \times 1024$.
- Maxpool** operation (represented by a 3D box) with dimensions $2 \times 2 - S - 2$.
- Conv Layer** (represented by a 3D box) with dimensions $14 \times 14 \times 1024$.
- Maxpool** operation (represented by a 3D box) with dimensions $2 \times 2 - S - 2$.
- Conv Layer** (represented by a 3D box) with dimensions $3 \times 3 \times 192$.
- Maxpool** operation (represented by a 3D box) with dimensions $2 \times 2 - S - 2$.
- Conv Layer** (represented by a 3D box) with dimensions $7 \times 7 \times 64 - S - 2$.
- Maxpool** operation (represented by a 3D box) with dimensions $2 \times 2 - S - 2$.

Arrows indicate the flow of data from the input image through the sequence of layers and operations.

Aim :-

To implement YOLO model for real time object detection.

Pseudocode:

- * Import required libraries.
- * Load a pre-trained YOLO model.
- * Load an input image.
- * Preprocess input
- * Pass the preprocessed image through YOLO model.
- * Obtain predictions.
- * Apply non-maximum suppression to remove overlapping boxes.
- * Draw bounding boxes and class labels on the detected objects
- * Display or save the annotated image.

Observation:

- * YOLO divides an image into grids and predicts bounding boxes and class probabilities.

Output :-

Detected: Dog (Confidence: 0.79)

Detected: Cat (Confidence: 0.72)

Detected: cat (Confidence: 0.32)

- * It performs end to end detection in one pass
- * YOLO is efficient for real time applications such as robotics
- * The accuracy depends on lighting conditions, and occlusion.
- * Detection is robust on diverse dataset like COCO.

Result :-

YOLO model successfully implements for object detection.