This page relates to OpenVINO 2023.3 (LTS). [Go to the latest documentation for up-to-date information.](#)

mobilenet-ssd

Use Case and High-Level Description

The `mobilenet-ssd` model is a Single-Shot multibox Detection (SSD) network intended to perform object detection. This model is implemented using the Caffe* framework. For details about this model, check out the [repository](#).

The model input is a blob that consists of a single image of `1, 3, 300, 300` in `BGR` order, also like the `densenet-121` model. The BGR mean values need to be subtracted as follows: [127.5, 127.5, 127.5] before passing the image blob into the network. In addition, values must be divided by 0.007843.

The model output is a typical vector containing the tracked object data, as previously described.

Specification

Metric	Value
Type	Detection
GFLOPs	2.316
MParams	5.783
Source framework	Caffe*

Accuracy

The accuracy results were obtained on test data from VOC2007 dataset.

Metric	Value
mAP	67.00%

See [the original repository](#).

Input

Original model

Image, name - `prob`, shape - `1, 3, 300, 300`, format is `B, C, H, W`, where:

- `B` - batch size
- `C` - channel
- `H` - height
- `W` - width

Channel order is `BGR`. Mean values - [127.5, 127.5, 127.5], scale value - 127.5.

Converted model

Image, name - `prob`, shape - `1, 3, 300, 300`, format is `B, C, H, W`, where:

- `B` - batch size
- `C` - channel
- `H` - height
- `W` - width

Channel order is `BGR`

Output

Original model

The array of detection summary info, name - `detection_out`, shape - `1, 1, 100, 7` in the format `1, 1, N, 7`, where `N` is the number of detected bounding boxes. For each detection, the description has the format: [`image_id`, `label`, `conf`, `x_min`, `y_min`, `x_max`, `y_max`], where:

- `image_id` - ID of the image in the batch
- `label` - predicted class ID (1..20 - PASCAL VOC defined class ids). Mapping to class names provided by `<omz_dir>/data/dataset_classes/voc_20cl_bkgr.txt` file.
- `conf` - confidence for the predicted class
- (`x_min`, `y_min`) - coordinates of the top left bounding box corner (coordinates are in normalized format, in range [0, 1])
- (`x_max`, `y_max`) - coordinates of the bottom right bounding box corner (coordinates are in normalized format, in range [0, 1])

Converted model

The array of detection summary info, name - `detection_out`, shape - `1, 1, 100, 7` in the format `1, 1, N, 7`, where `N` is the number of detected bounding boxes. For each detection, the description has the format: [`image_id`, `label`, `conf`, `x_min`, `y_min`, `x_max`, `y_max`], where:

- `image_id` - ID of the image in the batch
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- `conf` - confidence for the predicted class
- (`x_min`, `y_min`) - coordinates of the top left bounding box corner (coordinates are in normalized format, in range [0, 1])
- (`x_max`, `y_max`) - coordinates of the bottom right bounding box corner (coordinates are in normalized format, in range [0, 1])

Download a Model and Convert it into OpenVINO™ IR Format

You can download models and if necessary convert them into OpenVINO™ IR format using the Model Downloader and other automation tools as shown in the examples below.

An example of using the Model Downloader:

```
omz_downloader --name <model_name>
```

An example of using the Model Converter:

Demo usage

The model can be used in the following demos provided by the Open Model Zoo to show its capabilities:

- Single Human Pose Estimation Demo

Legal Information

The original model is distributed under the following license:

```
MIT License

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```