SOLOMON

Dataset Structure and Config File

This document outlines the structure of the Solomon custom dataset and provides details about the associated configuration file.

It includes guidelines on how to organize training and validation data, format annotation files (such as val.json), and correctly define parameters in the configuration file to ensure compatibility with the Solomon training pipeline. A proper dataset folder structure is essential for successful model training and evaluation.

1. Folder Structure

The following shows the folder structure:

```
sol_project/
├── images/
│   ├── <image1>
│   ├── <image2>
│   ├── ...
│   ├── train.json
│   └── val.json
└── voc_config.json
```

2. val.json

The `val.json` must exist, even if it contains no annotations.

Note: The `categories` field must be consistent with the one in `train.json`.

```
{
    "info": {
        "keypoints": []
    },
    "categories": [
        {
            "box": true,
            "mask": true,
            "angle": false,
            "keypoint": false,
            "id": 1,
            "name": "person",
            "supercategory": "person",
            "color": [
                252,
                255,
                138
            ],
            "keypoints": [],
            "keypoint_colors": []
        }
    ],
    "images": [],
    "annotations": []
}
```

3. voc_confg.json

```
{
    "min_dimension": "800", // important
    "max_dimension": "1333", // important
    "image_height": "640", // important
    "image_width": "640", // important
    "multiscale": "0",
    "relative_bg": "0",
    "pr_on": "0",
    "counting_mode": "0",
    "counting_range": "0.3",
    "auto_optimization": "0",
    "eval_fscore": "1",
    "eval_iou": "0.5",
    "eval_step": "500",
    "max_iter": "2000", // affects number of training iterations
    "pre_topk_test": "1000",
    "post_topk_test": "1000",
    "pre_topk_train": "",
    "post_topk_train": "",
    "d_batch": "",
    "positive_fraction": "",
    "nms_thr": "",
    "ac_size": "",
    "ac_ratios": "",
    "iou_thr": "",
    "iou_label": "",
    "max_detections": "100", // affects max number of output detections
    "keypoint_matching": "0",
    "keypoint_matching_times": "3",
    "post_mode": "0",
    "gpu_limit": "-1",
    "relative_bg_value": "0.01",
    "test_score_thresh": "0.5", // affects confidence threshold
    "selected_model": "Model_2025_06_18",
    "modelsiz": "default",
    "dohistogram": "False,clahe,0.50",
    "doresizelow": "False,(0.4 1),0.50",
    "doflip": "False,both,0.50",
    "dorotate": "False,(0 30),0.50",
    "docolorjitter": "False,(0.8 1.2),(1 1.5),(1 1.5),(0 0.3),0.50",
    "donoise": "False,False 0.0 0.3,False 0.0 0.3,False 0.0 0.0,1.0",
    "dozoom": "False,both,(0.0 0.5),0.5",
    "doscale": "False,(0.9 1.1),0.5",
    "doshift": "False,both,(-0.3 0.3),0.5",
    "docopypaste": "False,1.0",
    "docopytoOKimage": "False,1.0",
    "doaddshadow": "False,0.6,1.0",
    "doresize": "",
    "domultiview": "False,0.5",
    "class_names": "box", // must be set correctly (required in newer
version; ignored in older version)
```

```
    "keypoint_names": "",
    "class_colors": "#FCFF8A", // must match class_names (required in
newer version; ignored in older version)
    "keypoint_colors": "",
    "intel_device": "GPU",
    "loss_peak_check": "0",
    "save_peak_data": "0",
    "peak_threshold": "1",
    "peak_loss_thresh": "1"
}
```