TAU-METRICS Planetary Gear Dataset

The dataset was generated by capturing 150 real images and annotating them with the correct labels (bounding boxes, keypoints and polygons). Further augmentation of the images completes the dataset to around 170,000 images. All tools and scripts to generate and replicate the dataset are provided, as well as the trained model and visualization scripts. More details are given below.

Code and instructions for re-generating the dataset are provided here: https://github.com/GaurangSharma18/Detection-Segmentation-and-Feature-estimation-pipeline

The dataset was developed by Tampere University (TAU) within the H2020 METRICS Project (metricsproject.eu/).

Dataset:
Sampled Images: 150 RGB images present in Dataset/COCO/Images path.

Annotated COCO Json:
Annotated JSON containing Bounding Box, Keypoints, and polygon segmentations.

Trained Model:
Model Folder: It contains trained model named model_final.pth file.

Metrics.json: It contains all the training data example loss, accuracy etc.

Augmentation:

scripts/augmentationScript.py: Python script containing augmentation code, requires arguments like COCO json file path, coco dataset images directory, and path to the augmentation text file. e.g.

python scripts/augmentationScript.py --json_file Dataset/aug/CocoJSON/CocoJSON.json --image_root Dataset/aug/Images --output_folder Dataset/aug/Splitted --hasKeypoints True --hasBBox True --hasSeg True --Augmentation True --split True --Val_Split 0.10 --JSON_type COCO --list_augmentations_file

AugmentationsSampleAugmentation:
This folder contains some sampled tested augmentations using just 2 transformations.

Augmentations text file:
Please specify transformations using albumentations library, PFB the link below.

Note: each line provides one transformed image per original image.

Link: https://albumentations.ai/docs/api_reference/full_reference/

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