**README file**

Data Set Title: **REMODEL. WP4. Vision Based Perception. T4\_4. Functional component detection. LOOP Experimental Dataset. v0**

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**Data set Contents**

The data set consists of:

* 2 compressed folders, named **loop\_dataset\_2018.zip** and **loop\_dataset\_synth\_2018.zip**. Each compressed folder contains
  + 15 folders, named **scan\_*\**** [with ***\**=from 01 to 15**]. Each folder contains the following subfolders
    - **flowbel\_annotations** that contains from 471 to 481 .npy files

**000*#*.npy** [with ***#*=from 000 to 471/481**]

* + - **images** that contains from 471 to 481 .jpg files

**000*#*.npy** [with ***#*=from 000 to 471/481**]

* + 17 textual files in .txt format

**class\_map.txt**

**models\_ratios.txt**

**scan\_*\**.txt** [with **x=from 01 to 15**]

* 1 README file in .rtf format

**REMODEL\_WP4\_T4-4\_LOOP-Experimental-Dataset\_README.rtf**

**Data set Documentation**

Abstract

This dataset contains experimental data related to robotic grasping applications, produced in the framework of REMODEL project. Specifically, it contains the collection of 15 tabletop scenes, with 12 randomly arranged objects, featuring different backgrounds: 3 scenes with homogeneous background; 3 scenes with wood; 3 scenes with black background; and 5 scenes with a high-clutter background (several prints of Pollock’s painting). The data are presented in the publication: De Gregorio, D., Zanella, R., Palli, G., & Di Stefano, L. (2020). Effective Deployment of CNNs for 3DoF Pose Estimation and Grasping in Industrial Settings. (in press).

Content of the folders and the files

The dataset is structured into two compressed main folders: “**loop\_dataset\_2018.zip**” and “**loop\_dataset\_synth\_2018.zip**”. Each main folder contains several "**scan\_\***" folders, and each “**scan\_\***” folder contains an “**images**” subfolder containing .jpg pictures.

In the main folder there is a “**scan\_\*.txt**” file with Ground Truth labels matching each "**scan\_\***" folder. Each of these labels files consists of a set of rows structured as following: *image\_path <INSTANCE> <INSTANCE>*, where each instance is: *label\_id, p0\_x, p0\_y, p1\_x, p1\_y, p2\_x, p2\_y, p3\_x, p3\_y*.

Each "**scan\_\***" folder also contains, in a subfolder, a list of “flowbel annotations”, that are the Ground Truth labels in .npy format for the corresponding image. The name of each .npy file matches the name of the corresponding .jpg image.

Finally, files “**class\_map.txt**” and “**models\_ratios.txt**” (contained in the main folder) report respectively the object’s name-class map and the bounding boxes ration for every object.

Notes

The data are presented in the following publication: De Gregorio, D., Zanella, R., Palli, G., & Di Stefano, L. (2020). Effective Deployment of CNNs for 3DoF Pose Estimation and Grasping in Industrial Settings. (in press).