

Evaluate PQ README

General Panoptic Quality evaluation script

Find the panoptic quality match PQ between predicted and GT mask for vessel content (the evaluation done for each vessel content separately). The script can run as-is with the example folders supplied.

The script has a few modes class agnostic that will evaluate the PQ value ignoring classification errors.

Vessel Matching will assume that the vessel indexes in the predicted and GT folders are different and will find the best between predicted and GT vessels instance before matching their content.

Main Input Parameters

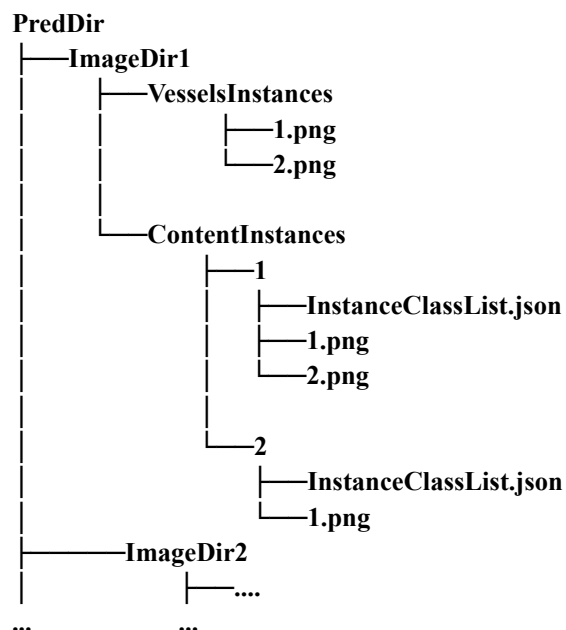
GTDDir: contains the path to the LabPics evaluation set that is used as Ground truth

PredDir: Contain the link to the predicted instances of the vessel Content (See Subfolder **ExampleData/Predict/** for example in this folder). Vessel contents are the materials and parts(optional) instances inside a vessel-specific vessel.

Prediction folder strucutre:

See Subfolder **ExampleData/Predict/** for example prediction folder.

The structure of the predicted dir should be as follows:



ImageDir: Should have the same name as the image folder in LabPics evaluation set for every image folder in the GT dir there should be a similar folder in the predicted folder.

ImageDir1\Vessels: Mask of Vessels instances this folder is optional and just use to match vessel instances of predicted and ground truth annotation. The vessel masks in this folder will be matched to the vessel masks in the GT LabPics folder. If the predicted vessel masks indexes match those of the GT already this folder can be ignored

ImageDir1\Vessels\1.png: Binary mask for vessel instance 1. Note that this doesn't have to match vessel instance 1 in the ground truth folder. Folder 1 in the **ContentInstances** folder will contain the predicted content of this vessel.

ImageDir1\ContentInstances: Folder contains the predicted content of each vessel as an independent subfolder.

ImageDir1\ContentInstances\1: Folder containing content of vessel 1 (vessel instance mask is given in ImageDir1\VesselsInstances\1.png.) If no **ImageDir1->Vessels** folder exists, vessel 1 match vessel instance 1 in the GT corresponding image folder (**GTDir\ImageDir1\Vessels\1.png**)

ImageDir1\ContentInstances\1\1.png: Mask for material instance 1 in vessel 1 (0/1 channel image)

ImageDir1\ContentInstances\1\InstanceClassList.json: Contain classes for material instances in vessel 1. For example: {"1": ["Liquid"], "2": ["Solid"]} means instance 1 is liquid and instance 2 is solid.

Additional parameters

MatchVessel: If true vessel indexes in the predicted and GT folders does not and will be matched by the script.

ClassToUse: classes that will be used for the evaluation.

IgnoreParts: Ignore instances that are parts.

IgnoreSurfacePhase: Ignore material instances cover surface.

IgnoreScattered: Ignore material instances that are scattered.

LimitToVessel: only this vessel types if "" check all.

IgnoreVesselsThatAreParts: ignore connectors condensers and stuff.

MinPixelsInVess: Ignore smaller vessels (in pixels).

MinPixelsInInstace: Ignore smaller instances (In pixels).

MatchThresh: Threshold for matching segments (IOU threshold for matching instances).

ClassAgnostic: Ignore misclassification errors only use IOU.