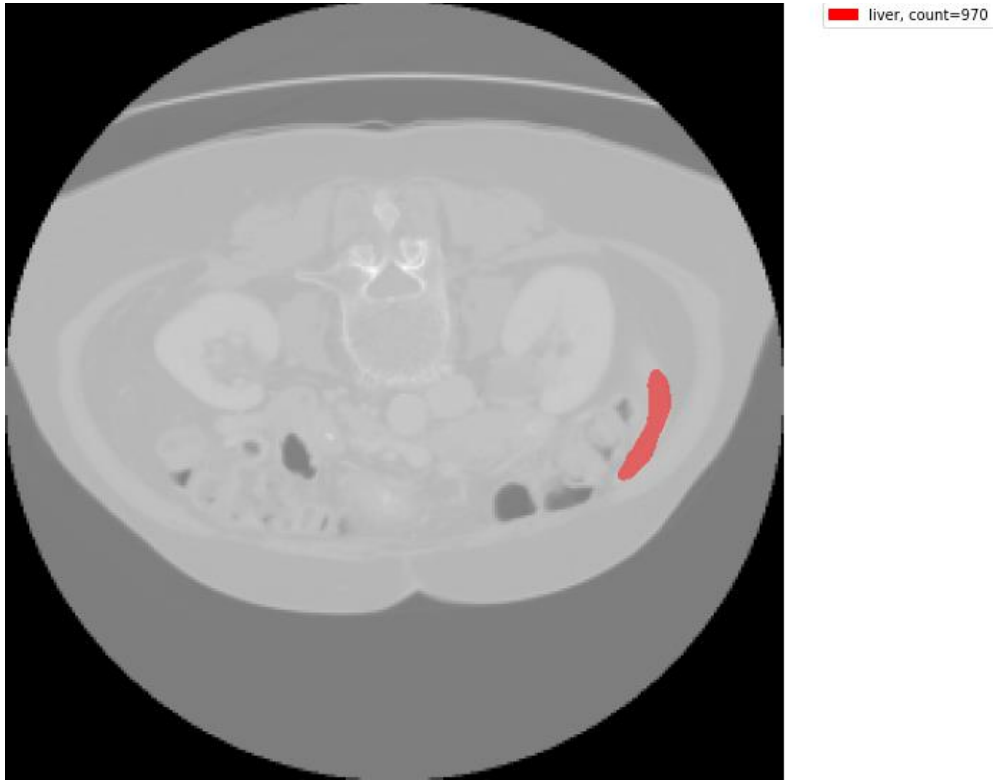
UNet2

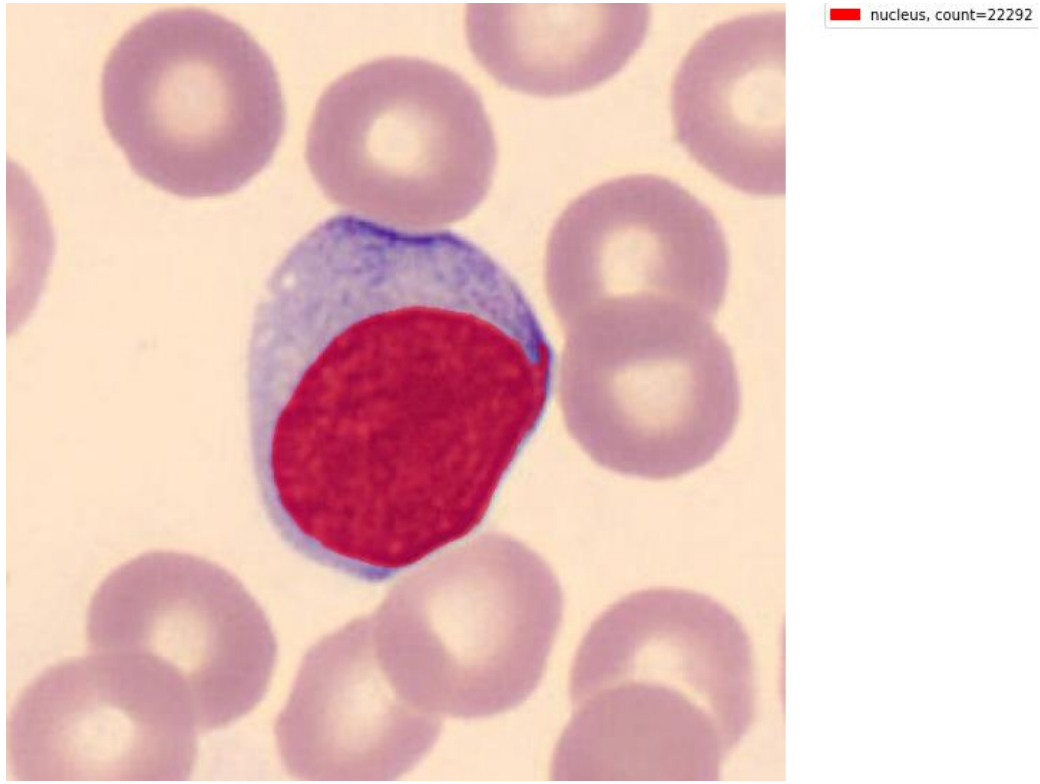
Use UNet to segment the image. It can be applied to medical image analysis, defect image analysis, etc.

Version 20230103

Applications

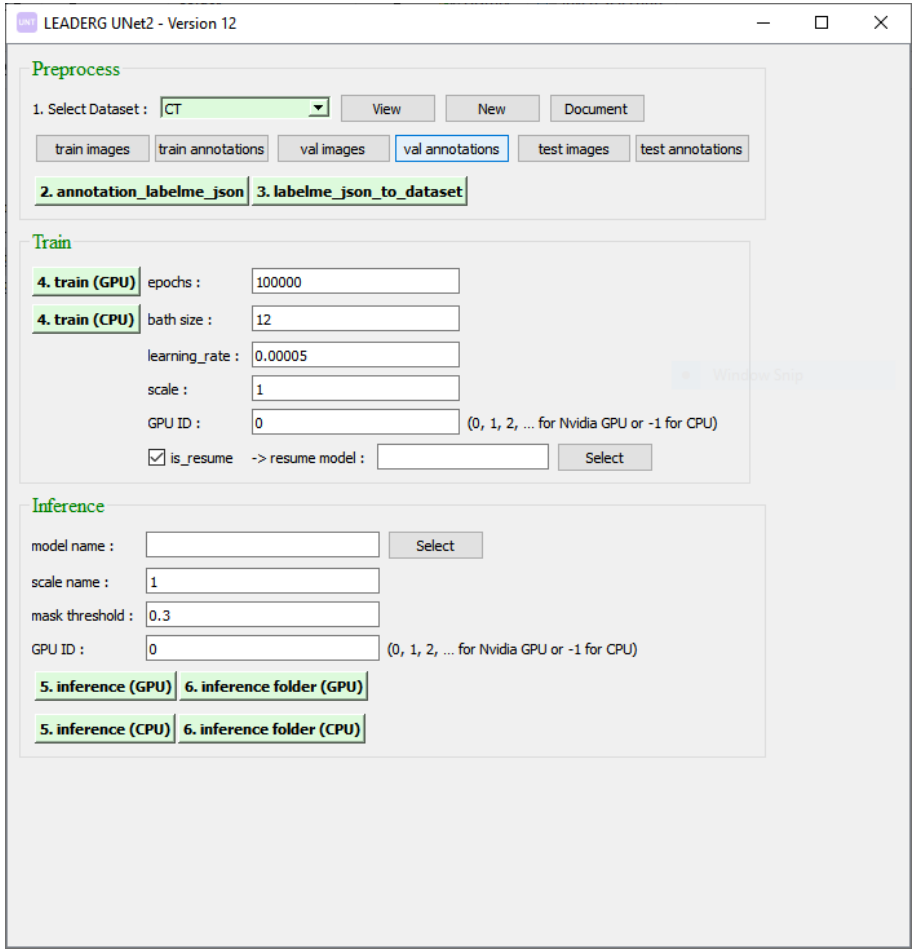
- It can be applied to medical image analysis, defect image analysis, etc.





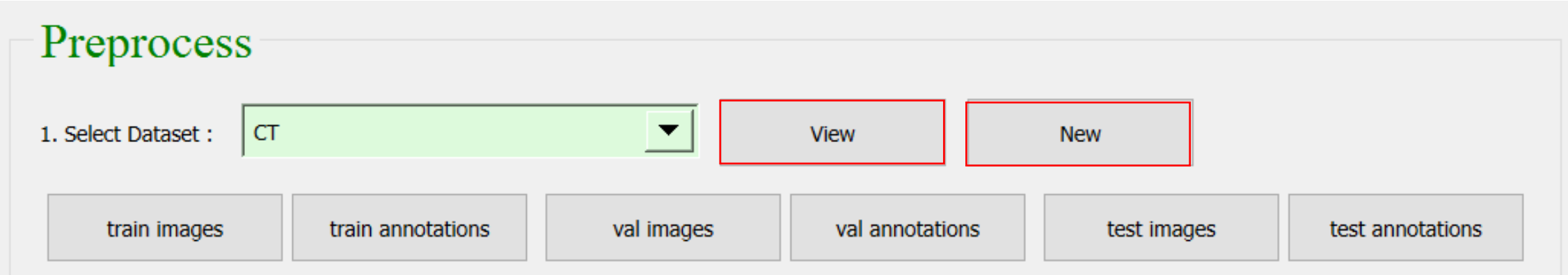
Process

- Preprocessing
  - Data preparation (1. Select Dataset).
  - Annotate images (2. annotation_labelme_json).
  - Convert file format (3. labelme_json_to_dataset).
- Train (4. train).
- Inference
  - Infer a single image (5. inference).
  - Inference folder (6. inference_folder).



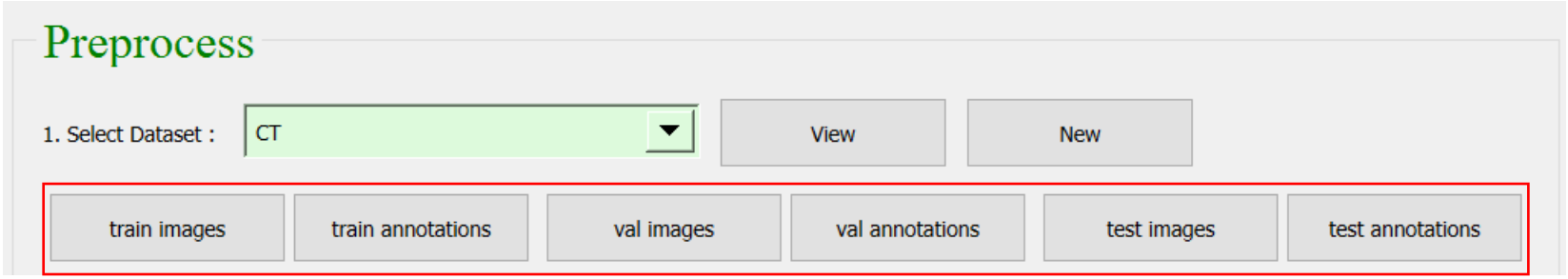
Dataset

- Select or create a new dataset.



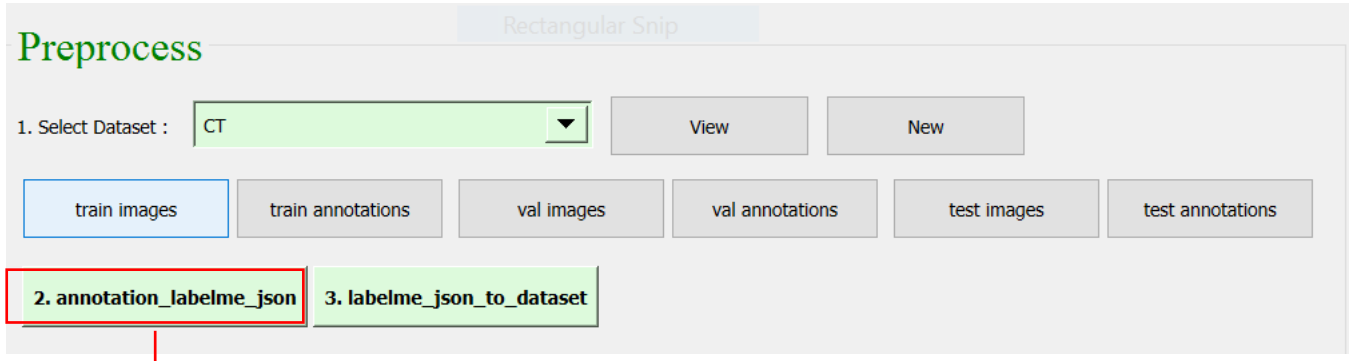
Dataset

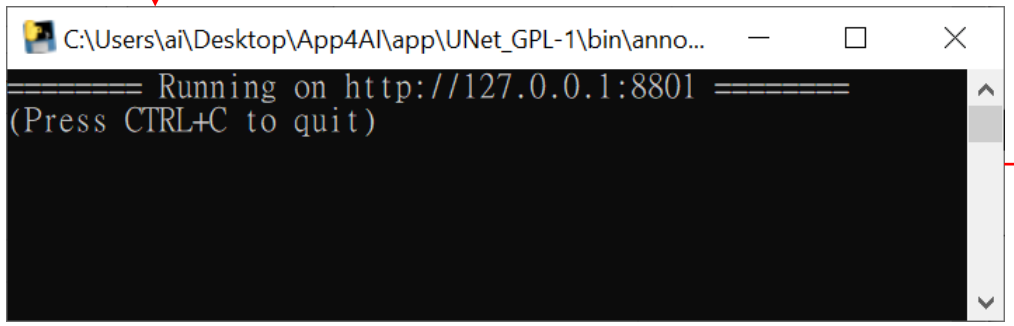
- Prepare training, testing, and validation images and place them in corresponding folders.
  - train images、annotations : Training image path and annotation file path.
  - val images、annotations : Validate image paths and annotation file paths
  - test images、annotations : Test image path and annotation file path.
- The recommended image size is 512*512.

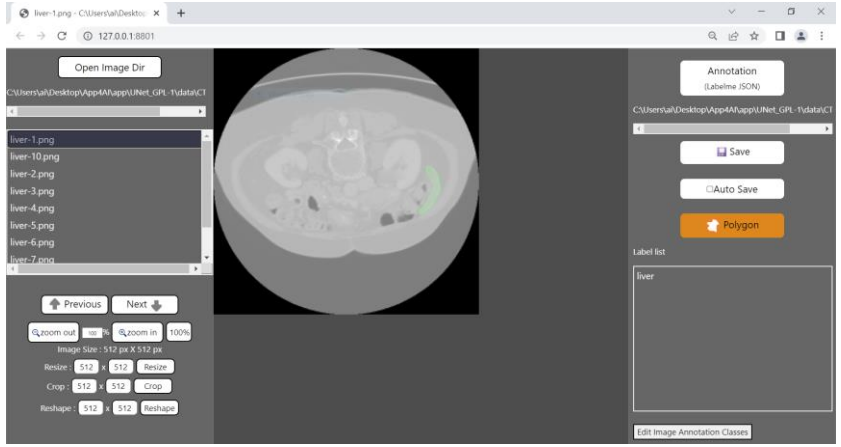


2. annotation_labelme_json

- Click the 2. annotation_labelme_json button to open the annotation tool.

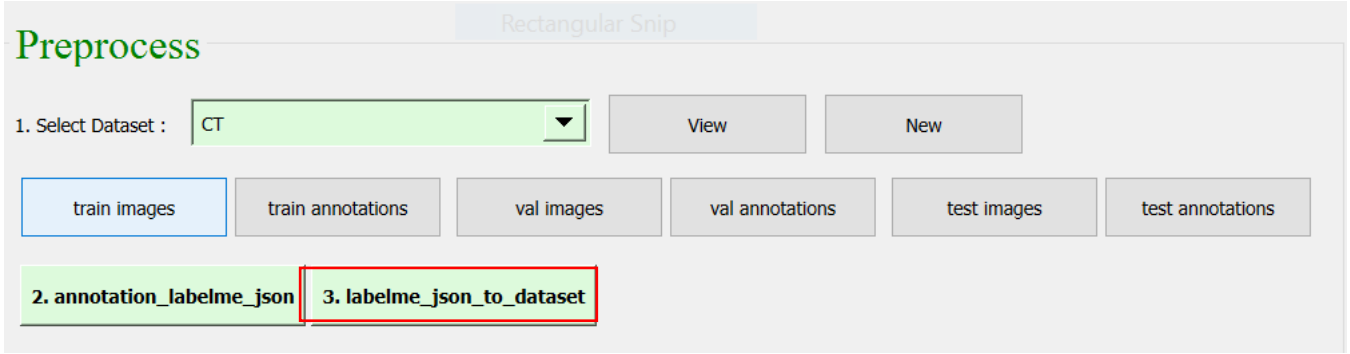


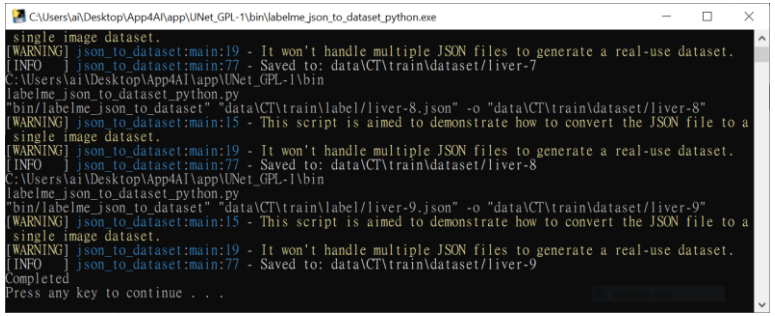


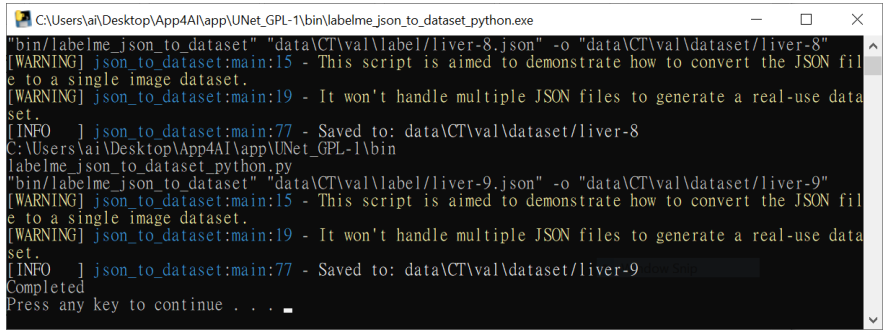


3. labelme_json_to_dataset

- Click the 3. labelme_json_to_dataset button to convert the labeled files into the files required for training.

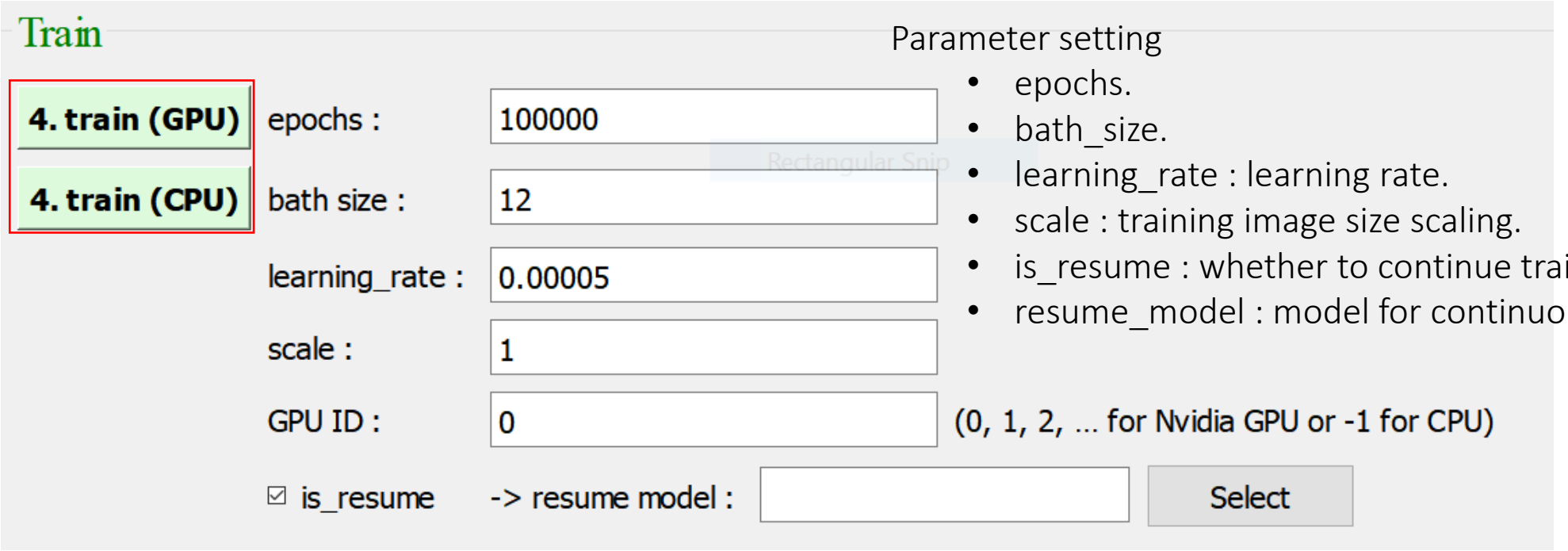






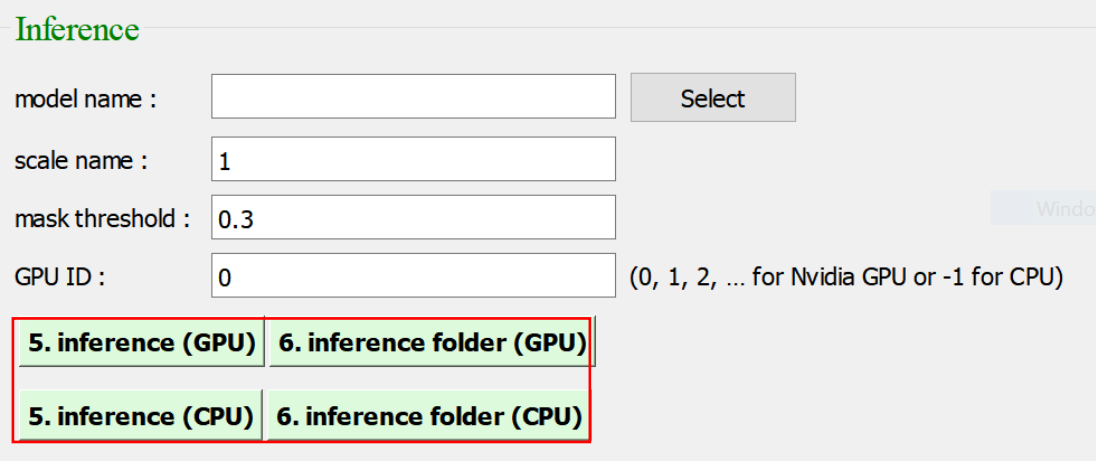
4. train

- Click the 4. train button to start training.
- The model path of the training output is in the model folder of the dataset.



5. inference

- Select model => click 5. inference => select an image => get the inference results for a single image.
- Select model => click 6. inference folder => select folder => get inference results for all images in a folder.

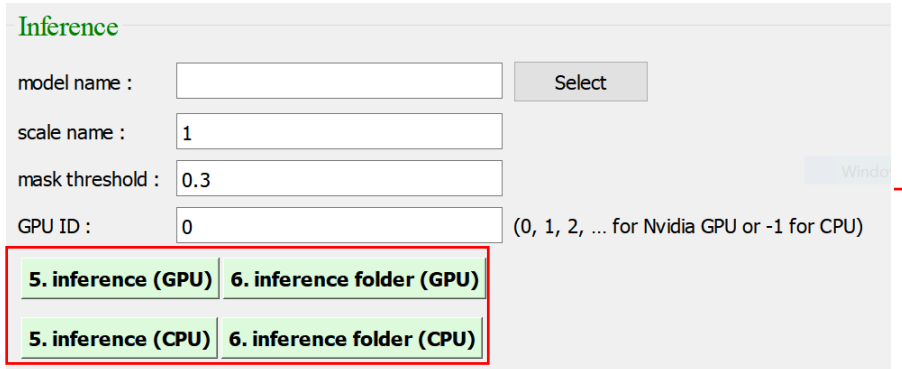


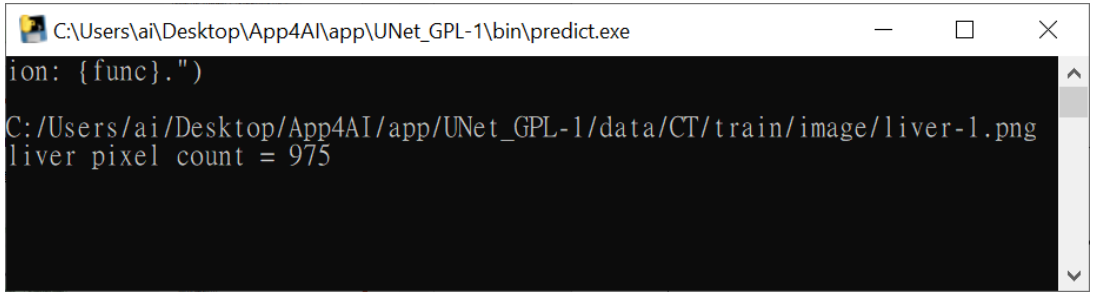
Parameter setting

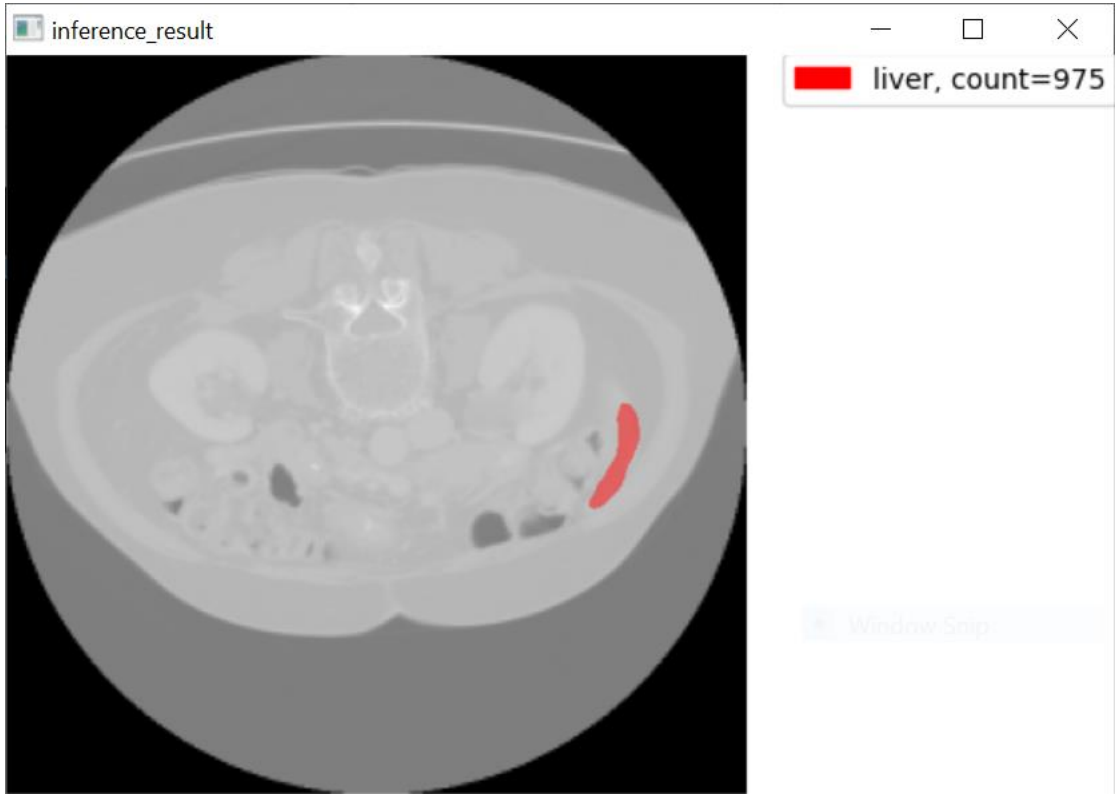
- model_name : model filename for inference.
- scale : the size scaling ratio of the inferred image, it is recommended to be the same as the train setting.
- mask_threshold : used for inferences with only a single class, only detected when the score is greater than this threshold.

5. inference

- Result :







Reference

- Please refer to the readme.txt in the APP folder.
- LEADERG AppsForAI : https://www.leaderg.com/appsforai-windows
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