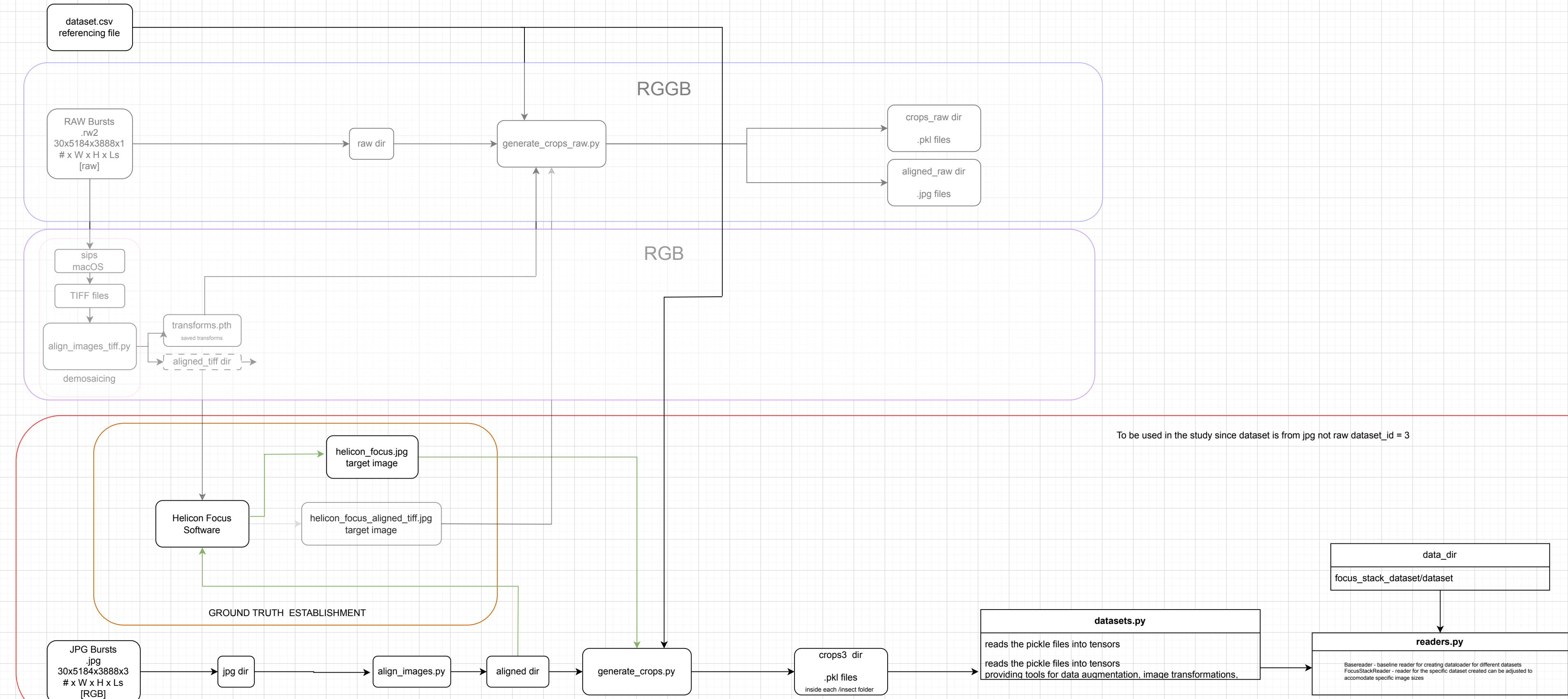
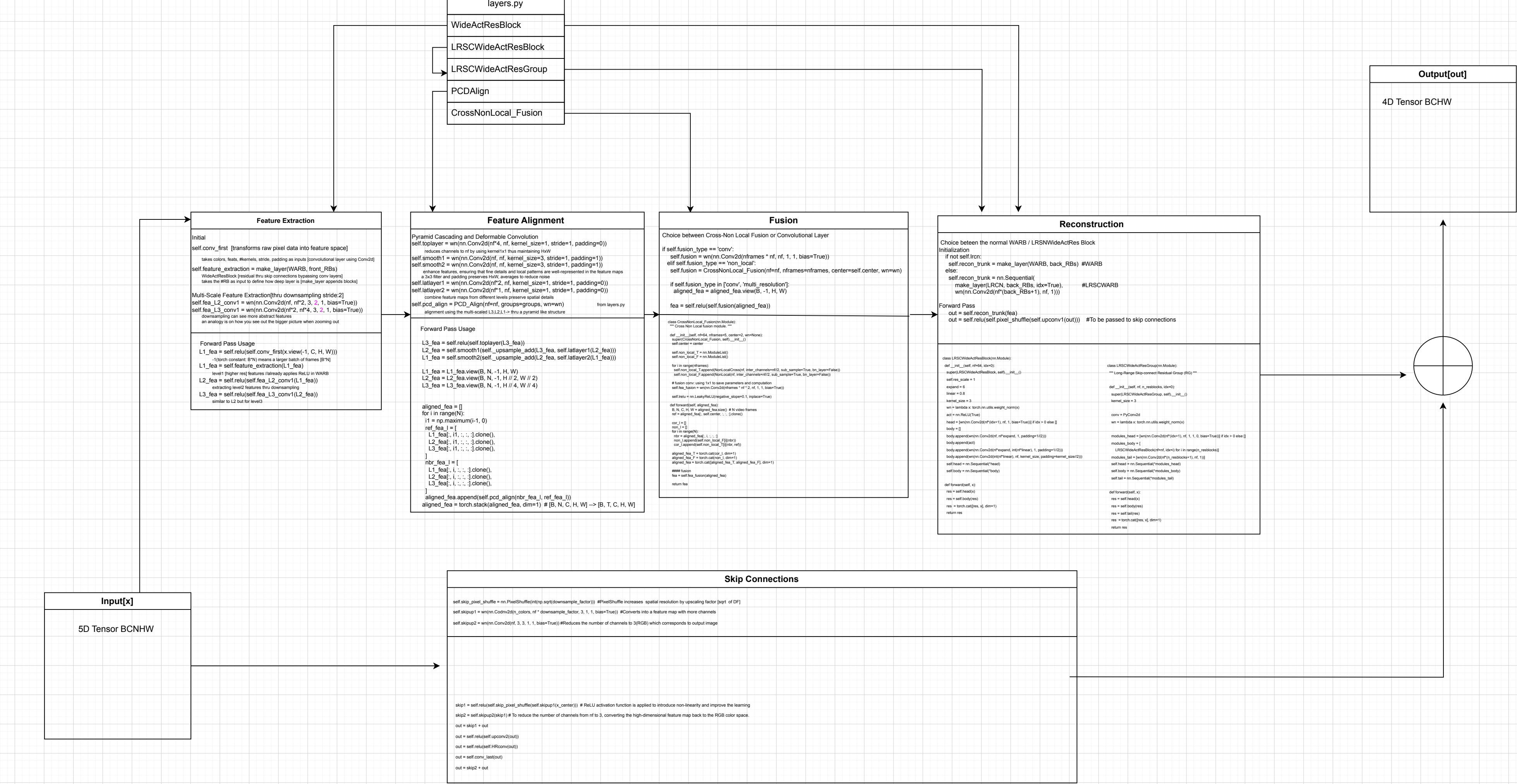


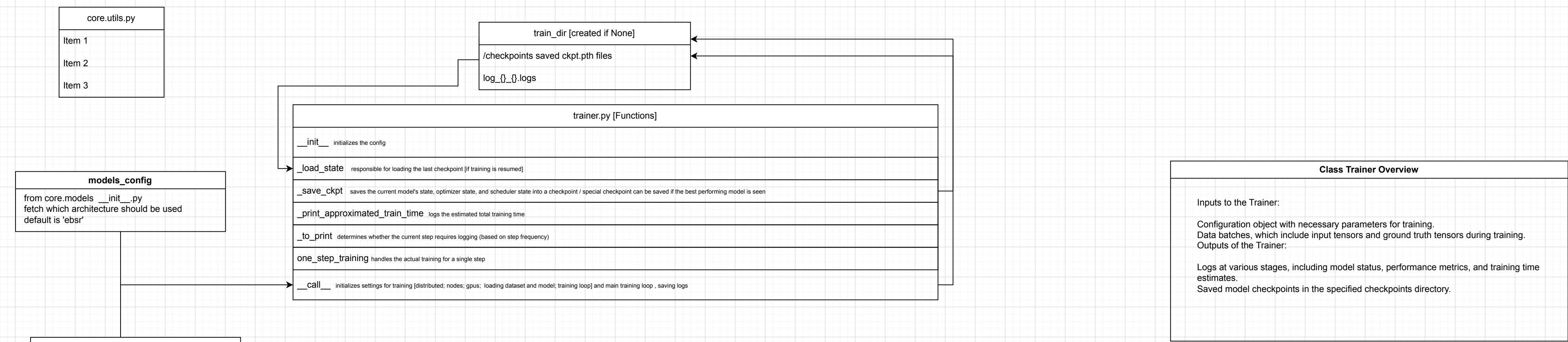
Dataset Generation



FocusDeep Model Architecture

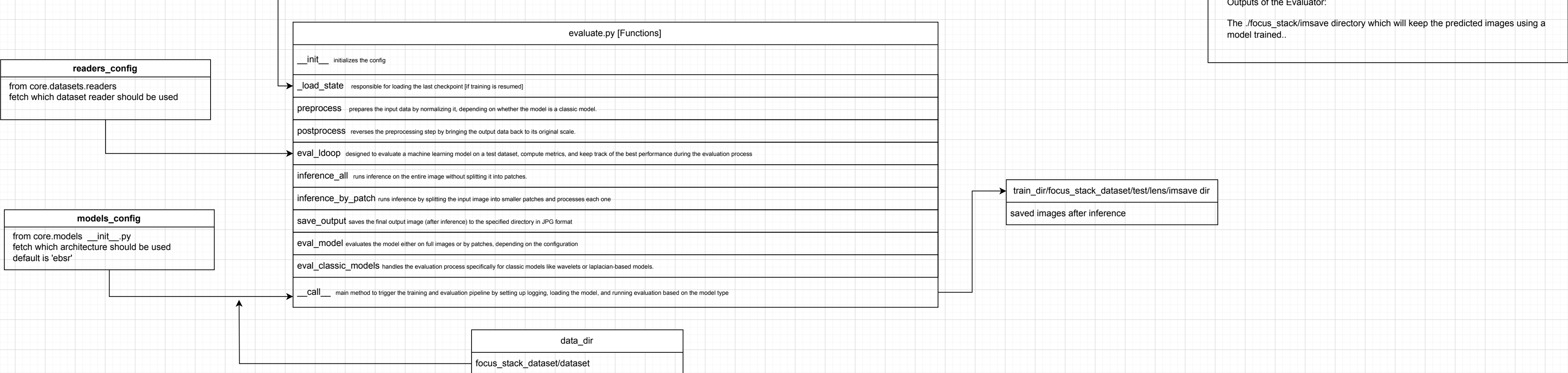


Training

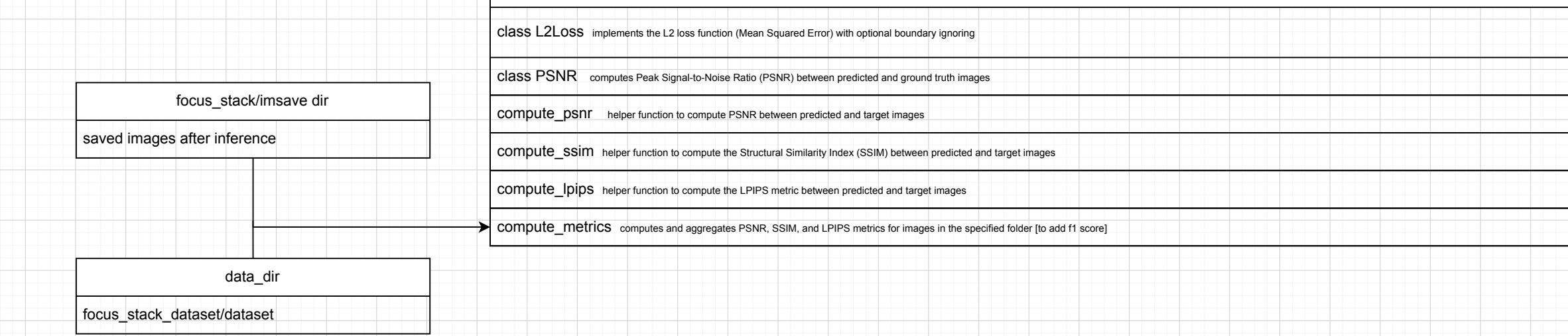


Evaluation

Model Inference



Output Evaluation



Changes

Change image resolution at readers.py to 5184 x 3888 to calculate properly how many patches should be generated

Change dataset_id to 3

Use generate_crops.py

In this case, the lens is considered the firstgroup and secondgroup while the split is the train and test

In evaluation indicate which "lens" to evaluate meaning which group should be evaluated

Use an older version of torch as function across auto mixed precision training using cuda is a deprecated function on latest torch release

Split Sequence

Install_requirements.sh -> generate_crops.py -> main.py [train] -> main.py [inference] -> eval_images.py

USAGE

Install dependencies

run install_dependencies.sh in the /scripts directory

Creating the crops

run generate_crops.py to create the crops3 directories in each insect folder

crops3 since crops(dataset_id) where 3 =jpg and _raw = raw

Training

run train_model.sh //change arguments if needed [e.g tuning]

Model Inference

run test_model.sh //change train_dir to timestamped folder at /trained models

Model Performance

run eval_images.py //change preds_path to path train_dir/insave

train_dir(timestamped folder)

Dependencies

core/datasets/	core/models/	core/inference/
torch torchvision numpy pandas PIL (Python Imaging Library) cv2 (OpenCV) glob natsort logging os math random sys re shutil json copy subprocess pickle rampy	logging os torch numpy cv2 glob logging rampy natsort sys re copy shutil json subprocess pickle rampy	logging os torch numpy cv2 glob logging rampy natsort sys re copy shutil json subprocess pickle rampy
main.py	generate_crops.py	eval_images.py
os sys shutil argparse glob copy datetime submit	os PIL numpy pandas glob torchvision natsort submit torch pickle cv2	os sys glob natsort cv2 PIL numpy torch llops pytorch_msssim