U-net based road segmentation project for self-driving cars and drones

Project Structure:

- common
  - eval.py - ml evaluation metrics
  - lidar.py - lidar data utils
  - nn.py - segmetation models
  - utils.py - varios utils for data preprocessing
- lidar_processing
  - kitti.ipynb
- misc
  - bird_view.ipynb - bird_view transform with pure tensorflow
- scripts
  - keras2tf.py - keras to tf models converter
- unet_experiments
- bin_segmentation - rosnode which output marked images
  - how to use:
    a. Run roscore.
    b. Start publish messages from pylon_camera_node_aca1300/image_raw/compressed.
    c. Republish pylon_camera_node_aca1300/image_raw/compressed such that it send messages of type Image, not Image_Compressed (rosrun image_transport republish compressed in:=pylon_camera_node_aca1300/image_raw raw out:=img).
    d. Run Python script scripts/predict_bin.py. It will return binary images where roads (asphalt and dirt roads) marked by white color and not roads marked by black color.