**image\_path:** Folder path for the images. It can contain several sub folders.

**panel\_path\_before:** it contains the images of the panel captured BEFORE the flight. Only one set of image (5 bands) should be in this folder.

**panel\_path\_after**: it contains the images of the panel captured AFTER the flight. Only one set of image (5 bands) should be in this folder.

**alignment\_mat\_path**: Folder path for the alignment matrices calculated for various altitudes.

**flight\_alt:** the above ground altitude (in meter) at which the UAV flew.

**panel\_detection\_mode:** There are two options:

* ‘default’ which is the Micasense algorithm for panel detection using the QR code.
* ‘my\_func’ which is the algorithm I developed for panel detection. It saves a binary mask for panel per each band in the same folder for panel.
  + Pros:
    - Sometimes the default algorithm is not able to detect the panel corners.
    - It can detect the panel even if the panel images were captured by drone from less than 10 meter altitude.
  + Cons:
    - It is slower than the default algorithm.

**panel\_capture\_mode:** if the panel\_detection\_mode is set to ‘my\_func’, then user needs to define whether the panel capture mode was either ‘manual’ or ‘drone’. In ‘manual’, pilot took the images manually per the instruction provided by Micasense. In ‘drone’ mode, pilot captured the images by flying at an altitude less than 10 meter above the ground.

**save\_as\_geotiff**: this is not active now. But the purpose is to save the stacked images with geotiff format.

**generateThumbnails:** it stacks red, green, and blue bands and saves a RGB thumbnail (with small size) per each image set.

**generateIndividualBands:** it saves individual bands after performing all of the pre-processing.

**overwrite:** it overwrites the pre-processed images (stacked, individual bands, and thumbnails) if there is an image with the same name in the corresponding folder.

**envi\_metadata**: it saves metadata with ENVI format for each multispectral (stacked) image.

**pix4D\_metadata:** it savesa CSV metadata for all individual bands.

**save\_json:** it extracts useful information from image metadata and saves them as a geojson file so we can open the captured images as points in QGIS/ArcGIS.