SkyArt

Today, Artificial Intelligence represents an emerging solution that can simplify some tasks even when they seem critical or really complicated. For Earth Observation, a limiting factor in the adoption of micro and nano satellites application is the limitation of downlink capabilities with respect to the amount of data acquired by sensors.

To this aim, IngeniArs presents the SkyArt CNN: an extremely lightweight, fast, and accurate segmentation algorithm.

The SkyArt CNN allows to classify with 91% of accuracy each pixel of the input image in two classes: cloudy or not cloudy.

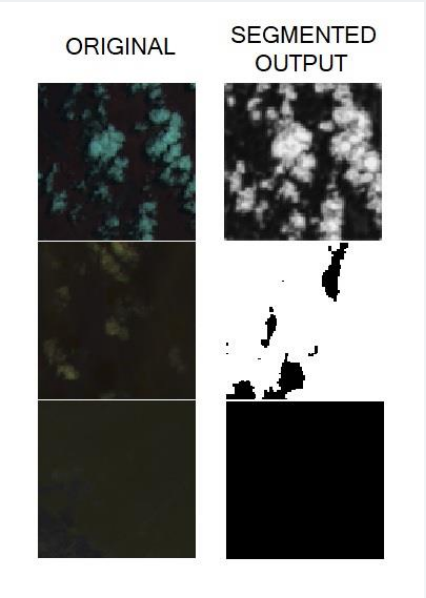
Thanks to its input independent architecture, it is possible to feed the network with 3 bands of multispectral images with different sizes. Finally, the network can be executed on different embedded platforms, such as Nvidia Jetson Nano, Intel Movidius Myriad 2 and Myriad X.

Furthermore, with a sufficient amount of data, it is possible to re-train the network for:

- ✓ new on-board hardware;
- ✓ fine customization (more input layers, bigger input size, etc.);
- ✓ dedicated application for data analysis.

Key Features

- Segmentation network
- 91% accuracy
  - ✓ 1% of FP
- 64KB memory footprint
- 100 ms inference time
- Available for GPU and Myriad-2 VPU
- 3 input channels
  - ✓ RGB
  - ✓ Hyperspectral channels
- Inference time related to the input image e.g. 192x192: 102ms



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