# 2019/04 - Deep Learning as a Service for Satellite Imagery Super-resolution

**Deep Learning as a Service for Satellite Imagery Super-resolution**

The problem of performing we try to solve is what we call multi-spectral imagery super-resolution. Satellites usually take images at different light frequencies and these different bands usually have different resolutions. For example in the case of ESA's Sentinel-2 satellite it has 4, 6 and 3 bands with 10m, 20m and 60m resolutions respectively.

The idea is to take these low resolution bands (20m and 60m) and to super-resolve them to high resolution (10m). Several methods have been implemented to do this, but we choose to follow [1] that is based on deep neural networks and has shown to outperform previous state-of-the-art pansharpening methods. The results of using this method can be seen in the figure below:

We have modified the original code of [1] in order to make it general enough to be trained on any satellite. In fact we plan to launch services to perform super-resolution on other satellites like LandSat 8 in addition to the current service for Sentinel 2.

**EOSC-hub week 2019**

**10 - 12 April , Prague**



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