



Cloud masking with Deep Learning applied to Landsat-8

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At any given time, clouds obscure over 60% of the Earth's surface when viewed from orbit. Many applications in Earth Observation (EO) require these clouds to be masked out as a preprocessing step. With the ever-increasing quantities of EO data being captured, the need for automated masking of cloud has become more and more pronounced. Our approach uses deep convolutional networks to segment input images. The fully convolutional architecture allows for images of arbitrary sizes to be inputted into the same model. Residual connections between different layers in the model allow for low-level information about pixel content to be fused with high-level textural and regional information. Originally designed for real-time on-board use with RGB multi-angle video, it has now been trained on a large dataset of annotated 11-band Landsat-8 images. In this work, we discuss the design of our algorithm, its performance on Landsat data, and its wider applicability to any segmentation task in remote sensing.