Classification of Land Cover Usage from Satellite Images Using Deep Learning Algorithms

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Abstract : Earth's environment and its evolution can be seen through satellite images in near real-time. Through satellite imagery, remote sensing data provide crucial information that can be used for a variety of applications, including image fusion, change detection, land cover classification, agriculture, mining, disaster mitigation, and monitoring climate change. The objective of this project is to propose a method for classifying satellite images according to multiple predefined land cover classes. The proposed approach involves collecting data in image format. The data is then pre-processed using data pre-processing techniques. The processed data is fed into the proposed algorithm and the obtained result is analyzed. Some of the algorithms used in satellite imagery classification are U-Net, Random Forest, Deep Labv3, CNN, ANN, Resnet etc. In this project, we are using the DeepLabv3 (Atrous convolution) algorithm for land cover classification. The dataset used is the deep globe land cover classification dataset. DeepLabv3 is a semantic segmentation system that uses atrous convolution to capture multi-scale context by adopting multiple atrous rates in cascade or in parallel to determine the scale of segments.

Keywords : area calculation, atrous convolution, deep globe land cover classification, deepLabv3, land cover classification, resnet 50

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