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Thème

Modèles semi-supervisés pour la segmentation sémantique d'images aériennes

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Abstract

During the last few years, many breakthroughs in the field of semi-supervised learning have proven to be very effective in overcoming the lack of labeled images caused by the high cost of pixel-level labeling. Numerous approaches exploring the use of both labeled and unlabeled images have been published. This thesis explores the current state of the art in semi-supervised semantic segmentation, highlighting experimental results, current challenges, and future research directions in this field. Additionally, this work includes an implementation of the self-training (ST) pseudo-labeling algorithm on aerial imagery to study the accuracy improvements that semi-supervised learning can bring over traditional supervised training. Our findings demonstrate significant accuracy enhancements in semantic segmentation tasks within this specific type of dataset, underscoring the practical benefits of integrating semi-supervised techniques.

Keywords — self-training, pseudo-labeling semantic image segmentation, deep learning, semi-supervised learning