

## Algorithm for Recognizing Trees along Power Grid Using Multispectral Imagery

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**Abstract :** Much of the Electricity Distributors has about 70% of its electricity interruptions arising from cause "trees", alone or associated with wind and rain and with or without falling branch and / or trees. This contributes inexorably and significantly to outages, resulting in high costs as compensation in addition to the operation and maintenance costs. On the other hand, there is little data structure and solutions to better organize the trees pruning plan effectively, minimizing costs and environmentally friendly. This work describes the development of an algorithm to provide data of trees associated to power grid. The method is accomplished on several steps using satellite imagery and geographically vectorized grid. A sliding window like approach is performed to seek the area around the grid. The proposed method counted 764 trees on a patch of the grid, which was very close to the 738 trees counted manually. The trees data was used as a part of a larger project that implements a system to optimize tree pruning plan.

**Keywords :** image pattern recognition, trees pruning, trees recognition, neural network

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