Oil palm tree detection and counting in aerial images based on faster R-CNN

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ABSTRACT

Malaysian oil palm industry has been a great contributor to the country's creation of job opportunity, foreign exchange earnings and GDP. Information about the amount and the distribution of oil palm trees in a plantation are important for sustainable management. In this paper, we propose an oil palm tree detection and counting method based on the Faster Regions with Convolutional Neural Network algorithm (Faster R-CNN). Experiment on the oil palm tree images collected by a drone shows that the proposed method can effectively detect the oil palm trees and counting its number when the age of the trees in a plantation is different from 2 years old to 8 years old. The proposed approach can be used to predict the scale of the plantation and meets the requirements of real-time detection.

KEYWORD

Object detection; Oil palm tree; Convolution neural network; Drone imagery

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