Tree Defect Segmentation using Geometric Features and CNN

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Abstract

Estimating the quality of standing trees or roundwood af- ter felling is a crucial step in forest production trading. The on-going revolution in the forest sector resulting from the use of 3D sensors can also contribute to this step. Among them the terrestrial lidar scanning is a reference descriptive method offering the possibility to segment de- fects. In this paper, we propose a new reproducible method allowing to automatically segment the defects. It is based on the construction of a relief map inspired from a previous strategy and combining with a con- volutional neural network to improve the resulting segmentation quality. The proposed method outperforms the previous results and the source code is publicly available with an online demonstration allowing to test the defect detection without any software installation

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