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INTERNSHIP OFFER - COMPUTER SCIENCE MASTER/ENGINEER - IMAGE PROCESSING

Deep Learning Crop and Weeds classification

Keywords: multispectral imaging, proximal sensing, semantic segmentation, deep learning, precision agriculture.

Project description: This internship follows the research conducted by Jehan-Antoine Vayssade on a multi-criteria approach for discriminating between crops and weeds. The work has resulted in the development of various methods, both conventional and based on deep learning, along with several labeled databases. Currently, the initial stages of the processing chain involve a specific neural network for soil/plant separation and another for semantic segmentation of leaves. The final classification step uses a conventional approach with a decision tree to select the most discriminative properties (shape, color, texture, etc.). The objective of this internship is to enhance the classification step by employing deep learning.

Activities: Conduct literature review to identify suitable neural networks for the subject. Familiarize yourself with the existing codebase (Python). Develop and evaluate a deep learning-based classification method. Contribute to the writing of a scientific article if applicable.

Expected Output: Develop and evaluate one or more classification methods considering all leaf properties. Compare with previously developed conventional imaging methods.

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