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Scientific Project Proposal for International Exchange Student

Topic : **Deep learning based classification system for identifying weeds using high-resolution UAV imagery**

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Laboratory : PRISME
Internship period : From January 15th till May 2019

Abstract

In recent years the damage caused by pests such as weeds and insects accounts for about 40% of global yield losses and is expected to increase in the coming years. To deal with this problem, farmers resort to pesticide spraying throughout the field. This way of eliminating pests involves large quantity of pesticides, but an uncontrolled use of these products is expensive and also harmful for humans and the environment. With the advancing technology a new way of fighting pests
called precision farming is more and more adopted in daily practice. Precision farming is about using sensors to assign the right amount of pesticides at the right time and in the right place. Thus, the amount of pesticide used can be reduced while increasing the yield.

However, Several methods of detection of weeds are proposed with different acquisition system. Compared to the ground robots or satellite acquisitions, drones have been considered more efficient since they allow a fast acquisition of the field with very high spatial resolution and low cost. However, even with strong technological advances in sensors and drones, automatic detection of weeds remains a big challenge.

The objective of this internship is to use deep learning for weeds detection using high resolution aerial images from a digital camera mounted on a UAV or drone.

Required skills: Matlab and/or python

Bibliography

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