MACHINE VISION BASED PLANT RECOGNITION FOR WEED SPECIES IDENTIDICATION

A PhD project by Mads Dyrmann

The purpose of the PhD project is to develop a system, which can partly or fully automate the process of weed species identification in images acquired from conventional grown fields.

Useful techniques for the project cover methods for shape description of organic shapes, automatic recognition of plants with no overlapping leaves or other vegetation in the image.

The reason for doing this is to reduce herbicide usage by utilizing the optimal mixture of herbicides based on knowledge of the present weed population in a certain field. The work will consist of creating software for automated image analysis that in the first iterations can help agricultural consultants in identifying weed species in images and later fully automate this process.

RoboWeedSupport

(1) Images are collected from airborne or handheld cameras

(2) An agricultural consultant annotates the weeds in the images. This work is supported by a computer, which over time should take over the work of the consultant.

(3) Based on the weeds present, the optimal herbicide mixture is used