

Project dossier

Titel (kortste titel (3 woorden max)): Patterns for profit

Titel lang (1 regel): Patterns for Profit: Augmented reality glasses for monitoring plant health

Projectnummer TU: KV1509 087

Partners (incl. weblink naar partners):

Seemoreandbetter BV

Background (max 500 karakters)

For growers and their workers it is difficult to harvest the right ripeness of fruits and vegetables and to detect disease damage with the human eye. Colour differences are in a very tight range. Augmented reality (AR) is a live direct or indirect view of a physical, real-world environment whose elements are "augmented" by computer-generated or extracted real-world sensory input (wikipedia). Wageningen developed a modified camera and software for AR glasses for helping its wearer in the agro-food domain.

Objective and intended result (max 500 karakters)

The objective is to use augmented reality to detect plant features better. These could be existence of plants, ripeness of fruits and vegetables en the detection of plant stresses and diseases. This project is focussed on two solutions:

1. Green plant detection for investigation of weed cover on pavements.
2. Plant health monitoring using the Normalized Difference Vegetation Index (NDVI).

Results (max 1000 karakters)

Using reflectance at specific wavelengths in the visible and near infrared range can enhance the contrast between healthy and unhealthy plants. The NDVI is calculated from the visible and near infrared light reflected by vegetation. Healthy vegetation absorbs most of the visible light that hits it, and reflects a large portion of the near-infrared light. Unhealthy vegetation reflects more visible light and less near-infrared light. A special camera is constructed that suppresses the red part of the spectrum and enhances the near infrared (NIR) part of the spectrum. The NDVI is calculated using the NIR and Green/Blue channels and overlaid on the scene the user is looking at.





Next steps (max 200 karakters)

Wageningen is trying to get funds to continue this research

Projectmovie (Youtube-link)

Geen movie

Dossier (de bijlagen in bullits)

- [Poster_Patterns_For_Profit.pdf](#)
- [PatternsForProfit eindrapportage](#)