On the use of depth camera for 3D phenotyping of entire plants

Submitted by Emmanuel Lemoine on Thu, 01/30/2014 - 14:34

Titre: On the use of depth camera for 3D phenotyping of entire plants

Type de publication: Article de revue

Auteur: Chéné, Yann [1], Rousseau, David [2], Lucidarme, Philippe [3], Bertheloot, Jessica [4], Caffier, Valérie [5], Morel, Philippe [6], Belin, Etienne [7], Chapeau-Blondeau, François [8]

Editeur: Elsevier

Type: Article scientifique dans une revue à comité de lecture

Année: 2012

Langue: Anglais

Date: 2012/03

Pagination: 122 - 127

Volume: 82

Titre de la revue: Computers and Electronics in Agriculture

ISSN: 0168-1699

Mots-clés: 3D measurements [9], Depth camera [10], High-throughput phenotyping [11], Plants [12]

Résumé en anglais: In this article, we assess the potential of depth imaging systems for 3D measurements in the context of plant phenotyping. We propose an original algorithm to segment depth images of plant from a single top-view. Various applications of biological interest involving for illustration rosebush, yucca and apple tree are then presented to demonstrate the practical interest of such imaging systems. In addition, the depth camera used here is very low cost and low weight. The present results therefore open interesting perspectives in the direction of high-throughput phenotyping in controlled environment or in field conditions.


Liens
Publié sur Okina (http://okina.univ-angers.fr)