



## 2D, 3D and 4D Imaging for Plant Phenotyping

Guest Editors:

**Dr. Guilherme N. DeSouza**

Department of Electrical and  
Computer Engineering, University  
of Missouri, Columbia, MO 65211,  
USA

**Dr. Christopher Topp**

Danforth Center, 975 N. Warson  
Rd., St. Louis, MO 63132, USA

Deadline for manuscript  
submissions:

**closed (31 July 2017)**

### Message from the Guest Editors

Population increases, degradation and loss of arable land, and the increasing appearance of new pests and diseases all threaten the world's food supply. Understanding how plants respond to environmental and genetic perturbations is essential to accelerating the improvement of crops and agriculture. That understanding would link plant genotypes and the molecular and eco-physiological responses with the expression of specific phenotypes in response to the growing conditions. High-throughput phenotyping provides an unprecedented opportunity to study the physiological, developmental, and molecular mechanisms that govern the dynamic behavior of plants.

In this Special Issue, we will focus on 3D imaging system for high-throughput phenotyping. The following is a non-exhaustive list of the main topics covered by this Special Issue: 3D image processing and analysis of plant (shoot and root) phenotypes, linear, surface and volumetric estimations (e.g., leaf angle, leaf area, canopy height and volume, biomass, etc.), 3D leaf segmentation, texture and visualisation; 4D imaging for growth analysis; multimodal imaging; imaging systems and devices; etc.





an Open Access Journal by MDPI

## Editor-in-Chief

### Prof. Dr. Raimondo Schettini

Department of Informatics,  
Systems and Communication,  
University of Milano-Bicocca,  
viale Sarca, 336, 20126 Milan, Italy

## Message from the Editor-in-Chief

The imaging term, specific with journal, is to be considered in its broadest sense. Image processing, image understanding and computer vision are all terms related to imaging acquisition, its processing and the extraction of relevant information from the scene to obtain the underlying knowledge. All tasks related to the above items are oriented toward specific applications in a broad range of areas and topics. The *Journal of Imaging* is conceived as an efficient vehicle in the scientific community for the communication and transmission of the progress and research results in the topics covered.

## Author Benefits

**Open Access:**— free for readers, with article processing charges (APC) paid by authors or their institutions.

**High Visibility:** indexed within Scopus, ESCI (Web of Science), PubMed, PMC, dblp, Inspec, Ei Compendex, and other databases.

**Journal Rank:** CiteScore - Q2 (*Computer Graphics and Computer-Aided Design*)

## Contact Us

*Journal of Imaging* Editorial Office  
MDPI, St. Alban-Anlage 66  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/jimaging](http://mdpi.com/journal/jimaging)  
[jimaging@mdpi.com](mailto:jimaging@mdpi.com)  
[X@J\\_Imaging\\_MDPI](https://twitter.com/J_Imaging_MDPI)