

Research Grants for PhD students from the China Scholarship Council

Information Form (please read the guidelines carefully on the website www-csc.utt.fr)

Supervisor's name : Given names :

Status (prof., assistant prof., ...) :

Laboratory : Website address :

Institution : Website address :

Scientific competence of the supervisor:

A. Hafiane is Associate Professor at INSA Centre Val de Loire and member of Image and Vision group in Prisme lab. His research interest include theory and methods of image processing, computer vision and machine learning, particularly for biomedical, agriculture and robotic applications. He developed several methods and approaches for image analysis using robust descriptors, segmentation, and machine learning algorithms. Many of these methods have been successfully applied in many research projects.

Two major publications in the field proposed for the PhD :

1.
2.

Website address of the personal page :

Supervisor's email :

Description of the research work proposed for a PhD **Topic # (see list) :**

Title :

Subject :

Plant disease is a major risk for crops, it involves economic loss, yield quality reduction, environmental impact when using chemicals for treatment. Diseases that spreads through the crop, is considered as a challenge for agriculture and the associated industries. Automatic detection and mapping of crop disease in earlier stage can help to limit its impact and reduces the use of chemicals. This thesis deals with the problem of detecting and locating symptomatic areas in multispectral images from unmanned aerial vehicle (UAV), satellite (Sentinelle), ground cameras,... Recently, artificial intelligence has seen major breakthroughs thanks to deep learning algorithms, which enabled to address difficult problems, such as object recognition, segmentation, classification, etc. However, the success of the deep learning approach is related to the large annotated image databases. Difficulties remain, especially when it comes to specific applications such agriculture for which we do not have large annotated image databases. In addition, the regions of interest are not always salient in the images generating weak visual information. For that purpose, robust algorithms based on machine learning methods will be developed to identify particular patterns, extract features and display the results on geographic information tools. Also, 3D imaging is envisaged to obtain in-depth characteristics and improve performance. The focus will be on one or two types of crops such as vine, ... with

Keywords :

Expected collaborations :

Background required from the applicant :

Existence of a PDF file detailing the proposal ("yes" or "no") :

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