

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:

Dr. Omar Tahri was born in Fez, Morocco, in 1976 got his Masters in photonics, images and system control from the Louis Pasteur University, Strasbourg, France, in 2000 and received his Ph.D degree in computer science from the University of Rennes, France, in March 2004. In June 2014, he obtained the Habilitation à Diriger des Recherches (HDR) from Blaise Pascal University. His research interests include robotics and computer vision, especially visual servoing.

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 :

The goal of visual servoing techniques is to control a dynamic system as a robot arm, a ground mobile robot or a drone, by using the information provided by one or multiple cameras. Control laws are usually developed using the modelling of the robot interaction with their environments based on the dynamic of the visual features. The modelling step is usually based on strong assumptions on the scene dynamics, lightening conditions, and on objects. If the scene is strongly dynamics, changing lightening condition or deformable object are considered, visual servoing based on such models usually fails. Recently, control methods based on learning are gaining lot of interests in the robotics community. They are used in situation where deterministic modelling of the robot/environment interaction is difficult to achieve. One of the problems for learning approaches using vision sensor is the kind of visual information and its required amount for a successful task achievement. The nature of used visual features used in visual servoing has shown strong influence on performance of the control loop. Another major challenge is the extension of a developed approach for one specific task to a different one. This project aims first to define relevant visual information for learning methods to control robots. It is also concerned with developing generic method based extendible from one task to a different one.

Keywords :

Expected collaborations :

Background required from the applicant :

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

(see guidelines on the website www-csc.utt.fr)