



PhD grant offer in robotic vision

Title: Omnidirectional vision-based navigation of a semi-autonomous wheelchair

Place: MIS laboratory, Université de Picardie Jules Verne (UPJV), Amiens, France

Supervisors: Prof. El Mustapha Mouaddib and Dr. Guillaume Caron

Applications: before June, 20th 2017

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Subject:

The EU Interreg V funds the PhD grant in the frame of the ADAPT¹ project: Assistive Devices for empowering disAbled People through robotic Technologies. Twelve partners are involved in this international project, including ESIGLEC Rouen (FR, leader), UPJV Amiens (FR), INSA Rennes (FR), Univ. of Kent (UK), Univ. College of London (UK) and health structures and companies on both sides of The Channel. A part of this project is dedicated to a smart wheelchair equipped with sensors is under implementation in order to assist the disabled person using it, that is the precise context of the PhD thesis topic.

The MIS lab, and particularly our Robotic Perception group (20 members), is well known in the non-conventional vision, including omnidirectional cameras, for mobile robotics research field, for more than twenty years. The MIS lab is in the city of Amiens, France, just one hour from Paris. Lab members come from many countries, including Italy, Morocco, Mexico, Mauritania, Vietnam, Romania, in addition to France, obviously, leading to a nice international atmosphere.

Based on MIS knowledge and skills, the PhD student will tackle the visual servoing of the wheelchair exploiting new visual features as the one introduced in [Crombez+ @ ICRA 2015]. Extending these features to the smart wheelchair context, that will also benefit from urban 3D models, and merging the computed control inputs with the user ones, will improve the navigation in cities, thus providing interesting contributions.

Needed skills:

- Master degree in computer vision and/or (mobile) robotics
- very good computer vision and image processing knowledge (theory and practice)
- experience in object oriented programming (C++)
- confidence in English writing and speaking

Applications:

Please send your motivation letter and resume to guillaume.caron@u-picardie.fr and mouaddib@u-picardie.fr.

[Crombez+ @ ICRA 2015] N. Crombez, G. Caron, E. Mustapha Mouaddib. **Photometric Gaussian Mixtures Based Visual Servoing**. *IEEE/RSJ Int. Conf. on Intelligent Robots and Systems, IROS'15*, pp.5486-5491, Oct 2015, Hamburg, Germany.

¹ The ADAPT project was selected under the European crossborder cooperation program INTERREG V A France (Channel) England, co-funded by the ERDF.