

Open position for PhD Student. Safe active semantic visual mapping and navigation at Universidad de Zaragoza.

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Robotics, Perception and Real-Time Group at the I3A, Universidad de Zaragoza

(Spain) is looking for PhD student candidates with excellent academic qualifications interest in pursuing a PhD in the context of Roboearth European Project focused in the 3D sensing capabilities of a mobile robot (<http://www.roboearth.org/>). The consortium is composed of 6 partners from 4 European countries (Eindhoven University of Technology, Philips Applied Technologies, University of Stuttgart, ETH Zurich, Universidad de Zaragoza, and Technische Universitat Munchen)

How to apply

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Deadline for application : November 18th, 2010

e-mail: [jmm.montiel.phd.position.10 at gmail.com](mailto:jmm.montiel.phd.position.10@gmail.com) +34 976 761975

If interested, please send to [jmm.montiel.phd.position.10 at gmail.com](mailto:jmm.montiel.phd.position.10@gmail.com) before November 18th, 2010

1- C.V.

2- Motivation letter (career plan, motivation for PhD, statement of research interest)

3- Copy of original study certificates with list of subjects, grades, and scale (indicate min, max, and pass threshold for your class) for Master degree, Computer Science, Mechanical Engineering, Robotics, Mechatronics, Mathematics, Physics or similar.

4- Copy of international publications, if available (max 3).

5- Two references, including its phone contact details

Requirements:

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Academic: Excellent academic grades. Computer Science, Electrical Engineering, Maths or Physics. Master degree in the related areas will be valuable but not imperative.

Background: Knowledge in robotics, computer vision image processing. Previous experience in navigation, mapping, SLAM techniques Programming skills in Matlab and C++ is valuable.

Nationality requirements: European Citizen, or European residence permission.

Contract Type: Phd. Student Grant.

Position: Phd. Student

Start Date: December 1, 2010

Duration in months: 48

Salary: As determined by regulations of the Spanish PhD Student Grants (around 1200_/month)

Town: Zaragoza

Country: Spain

Place of Work: Universidad de Zaragoza. Zaragoza, Spain.

SAFE ACTIVE SEMANTIC VISUAL MAPPING AND NAVIGATION

Visual SLAM research has been focused in the ability to locate a camera with respect to an a priori unknown scene, under very general conditions and reducing the assumptions about the observed scene. The resulting map composed of geometric entities such as points and edges, normally has a reduced capability to represent the scene.

In the proposed research it is assumed that the robot has rich knowledge about the scenes being observed because the RoboEarth object database is available. The goal is to build a map composed of traditional meaningless geometrical entities plus the recognized objects in the database, resulting in a map where objects the robot has to interact with are precisely located.

The robot has to exploit the map information to plan the motions and safely navigate in order to locate the objects needed for a given task