

Transverse Activity on Intelligent Robotics
IEETA - Universidade de Aveiro
Campus Universitário de Santiago
3810-193 Aveiro
Portugal

September 27th 2013

Prof. Dr. José Santos-Victor
Instituto Superior Técnico
Lisboa - PORTUGAL

Dear Professor José Santos-Victor

Thank you for inquiring on the University of Aveiro's interest in the RBCog-Lab proposal based on the iCub humanoid robot. We understand that you are submitting a proposal to increase visibility and promote research to the Fundação para a Ciência e a Tecnologia (FCT) and would like to express our interest in the platform for research purposes and our support to this proposal.

We have particular interest in the platform, specifically, considering our previous activities:

- We have been carrying out research and development activity in humanoid robotics for about 10 years.
- We have many concluded masters' dissertations and several on-going in the field of humanoid robotics, and some themes would benefit of the availability of an iCUB platform.
- We have on-going and PhD applications in the field of humanoid robotics in areas where the availability of a iCub platform would allow research breakthroughs in some areas beyond the state-of-the-art, namely related to haptics and tele-kinesthetic approaches.
- We have strong research interests on high-level robot learning and human-robot interaction (currently in the framework of RACE, an FP7 project, as well as in several past projects), capabilities relevant for humanoid robots

Sincerely yours,



Vitor M. Ferreira dos Santos
Associate Professor



Luis Seabra Lopes
Associate Professor

GROUP/INSTITUTION

ATRI was created in IEEETA in 1999, acknowledging the strategic importance of developing this field of research in the institute. ATRI (officially, the University of Aveiro) is involved in the European Robotics Research Network (EURON) and its interest groups. ATRI's team counts currently with 15 staff researchers, 2 Post-Doc and 8 PhD students. Research in ATRI covers a broad range of topics, including Human-robot interaction, Robot learning, Humanoid Robots, Multi-robot systems, Distributed control architectures for robotics and Robots in Education.

Project Humanoid at the University of Aveiro (PHUA) - The PHUA started in 2003 with the purpose of developing humanoid platform to initially compete in the ROBOCUP by-then recently created Humanoid League. Locomotion and perception from on-board sensors were the main topics to address. A new platform was developed from scratch in 2010 and research became focused on learning from demonstration by incorporating haptic interface for human teleoperation. Since 2004, 7 graduation projects and 9 Masters' thesis have been concluded and ongoing there are 3 masters' thesis and two PhD applications. The group has also collaborated with other Universities in the conclusion of one PhD thesis in 2007 and one PhD thesis still on-going. Several papers were published in journals, book chapters and international and national conferences. The interest research areas include balance and locomotion learning by demonstration, haptic interfacing and telekinesthetics, and also rich sensory fusion using vision, inertial and force-based approaches.

RACE project (FP7) - The overall aim of this project is to develop an artificial cognitive system, embodied by a service robot, able to build a high-level understanding of the world it acts in by storing and exploiting appropriate memories of its experiences. Robot competence is obtained by abstracting and generalising from experiences, extending task planning and execution beyond preconceived situations. Activities successfully carried out by the robot for specific objects at specific locations may be generalised to activity concepts applicable to a larger variety of objects at variable locations.

TEAM

List of additional main researchers that may be interested in the platform:

Prof. Dr. Filipe Silva

Prof. Dr. Nuno Lau

Estimated number of students in the fields of Mechanical, Electronics and Informatics Engineering that could benefit from using the platform:

3 PostDoc

5 PhD students

6 M.Sc students