3rd International Workshop *"Teaching robotics, teaching with robotics"*:

Integrating robotics in school curriculum

Riva del Garda (TN), Italy

Friday April 20th, 2012

www.terecop.eu/TRTWR2012.htm

Call for papers

The 3rd International Workshop *"Teaching robotics, teaching with robotics"* will be held in Riva del Garda (Trento), Italy, on Friday April 20th, 2012. This workshop follows the spirit of the TERECoP project (www.terecop.eu) and continues the tradition of two previous successful workshops organised in [Venice (2008)](#) and in [Darmstadt (2010)](#). It will take place concurrently with the Italian Robocup Junior national tournament and the Discovery on Film exhibition organized by the Town Museum of Rovereto (IT).

The workshop is aimed to promote exchange and sharing of experiences among researchers in the field of educational robotics. Over the last years, at an international level, several efforts have been made to integrate robotics in tertiary and school education, mainly in science and technology subjects.

At tertiary level, whereas robotics is present as a regular subject, essentially in mechanical engineering and information engineering curricula, a problem is still present: how to make large classes of students to access laboratorial activities at affordable costs. For example, robots could be used as reference platforms to apply basic knowledge on computer programming and computer architecture, subjects usually taught at the first semesters of the computer engineering curricula, and therefore followed by most students of the year.

At school education level, robotics has been introduced from kindergarten to high secondary school, either as an interdisciplinary learning activity or focused on school subjects, such as Science, Maths, Informatics and Technology. Following the constructivist/constructionist paradigm, we see robotics technologies not as mere tools, but rather as technologies supporting new ways of thinking in teaching and learning. Educational robotics can actively involve students in authentic problem solving, enhance learners' research attitudes, and allow learners to carry out their own experiments and investigations. It also helps them to develop their abstract thinking and to acquire teamwork skills, independence, imagination and creativity.

Integration of robotics in school classes is not just a matter of students' and teachers' access to robotic technologies. Technology alone cannot affect students' minds and cannot act directly on learning. Appropriate educational philosophy, curriculum, learning environment, teaching methodologies and well-trained teachers are important factors for the successful integration of robotics innovation in school classes.

Following this framework, the **topics** of the workshop include:

– Reporting efforts to integrate robotics in school curriculum at all levels of education

– Aims, objectives and content of a curriculum in educational robotics

– Integration of robotics as a new discipline in school curriculum

– Integration of robotics in school science/informatics/technology curricula

– Integration of robotics in other subjects and school curricula

– Evaluation criteria and tools for measuring the impact of robotics on students' learning

– Constructivism / Constructionism and robotics

– Teacher training in educational robotics

– European and International trends in educational robotics

– Laboratory Experiments for teaching robotics at all education levels

– Hardware and software of new educational Robotic kits

– Methodologies for teaching robotics

– Robotics competitions/contests and their educational impact

– Robotics through Edutainment / Museums / Personal robots and their educational value

– Roboethics

– Connections between real robotics and science fiction robotics

– Web-based Robotics, Simulation, remote educational robotics

– Humanoid Robots and Human-Robot Interaction

Panel discussion

The workshop will conclude with a panel discussion on the preparation of a proposal to be submitted in the frame of a European Programme focusing on the development of studies and methodologies to integrate robotics in school curriculum

Poster session

In order to encourage dissemination of good practices and of successful experiences in educational robotics projects we encourage the submission of short reports of the work carried out in the form of "short paper plus poster". The short papers (2 pages) will be inserted in the proceedings; the posters will be presented at the workshop during the poster session.

Paper and poster submission and format

All manuscripts should be prepared according to guidelines available here. The page limit for the final submission of full papers is 10 pages (for posters 2 pages). Papers and posters must be uploaded via the EasyChair conference system (available soon). If you have never used the EasyChair system, you need to obtain an account here. Information about EasyChair is given here.

Publication

Accepted papers and posters will be published in the proceedings of the workshop on a CD-rom with ISBN number and online. At least one author for each paper must register in the workshop to present a paper or a poster.

Important dates

Deadline for submission of papers/posters: February 29, 2012

Notification of acceptance: March 31, 2012

Submission of final camera-ready papers/posters: April 10, 2012

Venue

The workshop will be held at the FiereCongressi of Riva del Garda (Trento, Italy) (http://www.palacongressi.it) on April 20th, 2012.

The organization of the workshop is run by IT+Robotics, spin-off of the University of Padova (www.it-robotics.it).

The workshop is held in conjunction with other two related events (in the same place):

- The Robocup Junior Italian national tournament (19-21/4/2012)

> The Robocup junior italy network (http://www.robocupjr.it) organises its IV edition (http://www.palacongressi.it/interne/dettagli.aspx?ID=22796&IDP=6480) of the national level competition. During three days several school teams, divided into the under-14 and under-19 groups, will compete following the traditional Soccer, Dance and Rescue challenges (Rescue, Dance and Theatre for Under-14).

-The Discovery on Film exhibition of the Town Museum of Rovereto (http://www.museocivico.rovereto.tn.it)

> This is an annual exhibition including demonstrations of educational robotics experiences shown by several schools/Universities from Italy and other countries (see for a description of the last year event) http://www.museocivico.rovereto.tn.it/events_detail.jsp?IDAREA=5&ID_EVENT=323&GTEMPLATE=default.jsp People attending the workshop will be able to ask also the participation to these demonstrations (contact the chairmen within the same deadline of the first paper submission).

Riva del Garda (http://www.rivadelgarda.com/en) is a very nice town situated in the north-west of the famous Garda Lake, the largest one in Italy, dominated by the Dolomites of Brenta and surrounded by a rich Mediterranean vegetation.

Chairmen

Dimitris Alimisis, Dept. of Education, School of Pedagogical and Technological Education, Patras, Greece

Michele Moro, Dept. of Information Engineering, Univ. of Padova, Italy

Program Committee

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