



Educational Robotics as Learning Tool - what to teach and how to teach

Dr. Amy Eguchi

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*General Chair of RoboCup Junior 2010,
Trustee of RoboCup Federation*

Robotics technologies represent a practical application of science, technology, and arts, and provide a very powerful and flexible approach to demonstrate a variety of multi-disciplinary concepts. The workshop begins by discussing the prospects of deploying robots as a teaching and learning tool. Popular pedagogical frameworks towards implementing robotics infused curriculum will be elaborated. Critical questions about what the students are getting out of educational robotics activities and evidences of robots role in aiding education would be answered. There are various skills and knowledge that students can learn through educational robotics activities. This workshop let you explore possibilities of teaching what you want to teach through educational robotics.

The workshop would then focus on RoboCup Junior case studies with a focus on providing a hands-on, scaffolded environment where learners can grow by expanding their knowledge of, sparking their curiosity about and increasing their comfort with technology. Dr. Eguchi shall present the three component challenges of RoboCup Junior namely dance, rescue and soccer which serve as the largest annual robotics event attracting students from all over the world towards showcasing their capabilities and sharing knowledge among one another. In this workshop, she shall critically examine the impact of RoboCup Junior competitions on education. Drawing upon her experiences with RoboCup Junior competitions since 2000, she shall explain how RoboCup in education can open up enormous opportunities towards revolutionizing learning in the 21st century. As Singapore is moving ahead to host RoboCup 2010 here, Dr. Eguchi shall also highlight key directives towards establishing a successful RoboCup Junior team.

About the Speaker:



Dr. Amy Eguchi is an assistant professor of education in the Division of Education at Bloomfield College, USA. She will be the General Chair for RoboCup Junior 2010 to be hosted in Singapore. She has been involved as a committee member of RoboCup Junior, an International Educational Robotics Initiatives, since 2000. She has taught educational robotics to undergraduate and graduate students

as well as K-12 teachers and students. She teaches Introduction to Education (EDC103) and Robotics as Learning Tool (IDS134), and helps to integrate technology in all education courses at the college. She began teaching educational robotics when she was a visiting scholar at Columbia University. In addition, she has taught educational robotics at The School at Columbia University, both as a class and in after school clubs.

Dr Eguchi received a BA degree in English Linguistics from Keio University in Tokyo, Japan; an MA degree in Human Development, specialization in Bicultural Development, from Pacific Oaks College in California; an Master in Education (Ed.M.) degree from the Harvard Graduate School of Education in Massachusetts, and a Ph.D. in Education from the University of Cambridge in the United Kingdom. She was a visiting researcher at MIT where she began her research in robotics.



RoboCup (Singapore)
Association
www.RobocupSingapore.org

RoboCup

RoboCup is a world-class international research and education initiative in robotics and artificial intelligence. There will be more than 3,000 researchers, scientists, engineers and students from more than 40 countries all over the world coming to Singapore for competition, conference and exhibition in 2010. The RoboCup competition has four major domains, i.e. Soccer, Rescue, @Home, and RoboCup Junior.

RoboCup Junior is a project-oriented educational initiative that sponsors local, regional and international robotic events for young students up to age 19. Students of all ages regardless of their experience in robotics are welcome to join this event. This is a new and exciting way to understand science and technology through hands-on experience with electronics, hardware and software, as well as highly motivating opportunities to learn about teamwork while sharing ideas and technology with friends.

ROBOCUP – SG

RoboCup (Singapore) Association, ROBOCUP-SG (ROS Ref. No: 2117/2008) is to promote robotic science and technology in Singapore and the neighboring region.

RoboCup (Singapore) Association has been authorised by RoboCup Federation to organise all the RoboCup related events and activities in Singapore.

RoboCup 2010

Singapore will host the RoboCup 2010. This event is jointly organised by Singapore Polytechnic (SP), Science Centre Singapore (SCS), and Singapore Economic Development Board (EDB). For details, please visit www.RoboCup2010.org



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Association**
www.RobocupSingapore.org

Course Information

Date: 7 Sept 2009 (MON)

Time: 8.30 am to 5.30 pm

Venue: Singapore Polytechnic Graduates' Guild

Registration is on a 1st come 1st serve basis. Register early to avoid disappointment.

Course Outline

- ❖ Introduction to Educational Robotics
- ❖ Robots as learning and teaching tool
- ❖ Robot Centered Pedagogical frameworks
- ❖ RoboCup Junior

Course Benefit

You will learn about,

- ❖ How robots can be best infused into curriculum
- ❖ What are the best topics to be taught using educational robots
- ❖ What is RoboCup Junior & its impact on education
- ❖ How to develop a successful team for RoboCup Junior competitions
- ❖ RoboCup Junior & its potential benefits for Singapore schools

Who Should Attend

School teachers, Instructors, Lecturers, Professors, Robotists, Robot hobbyist, and students.

Course Fee

- [] \$500
- [] \$450 (10% off for early bird)
(Registration is confirmed by 28 Aug '09)
- [] \$400 (20% off for school teachers)
- [] \$350
(School teachers who registered by 28 Aug '09)

Important Notices:

- ❖ Payments are required with registration prior to confirm reservation of seats.
- ❖ Registration fee includes refreshments, lunch, and full training documentation.
- ❖ Payment terms: Fee must be paid before the event.

Program

8.30 am	Registration
9.00 am	Welcome Address
9.10 am	Session 1
10.30 am	Tea break
11.00 am	Session 2
12.30 am	Lunch
2.00 pm	Session 3
3.30 pm	Tea Break
4.00 pm	Session 4
5.00 pm	Question & Answer
5.30 pm	End

Registration

- ✉ Fax: 6870-8044
- @ E-mail: seminar@RoboCupSingapore.org
On-line: <http://robocupsingapore.org/registration.php>
- ✉ Mail: **RoboCup (Singapore) Association**
c/o Advanced Robotics and Intelligent Control Centre (ARICC)
Singapore Polytechnic
500 Dover Road
Singapore 139651
- 📞 Enquiry: 6772-1772 (Ms Tian Rong)

Cancellations and Transfers

- All cancellations must be made in writing by fax, email or post.
- ❖ A substitute delegate is welcomed at no additional charge, if you are unable to attend.
 - ❖ You will receive a full refund less 15% administration charge if cancellation is received in writing before 1 September 2009.
 - ❖ Robocup (Singapore) Association reserves the rights to cancel the workshop before 4 September 2009. Paid participants will be refunded.

Registration Method

Please make payment in Singapore dollars using crossed cheque in favour of **RoboCup (Singapore) Association**.



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Registration Form

Organisation

Organisation: _____

Address: _____ Post Code: _____

Tel: _____ Fax: _____ E-mail: _____

Contact Person: _____

Participants

<p>1 Name (Dr/Mr/Ms): _____</p> <p>Designation: _____</p> <p>Contact No: _____</p> <p>Email: _____</p>	<p>3 Name (Dr/Mr/Ms): _____</p> <p>Designation: _____</p> <p>Contact No: _____</p> <p>Email: _____</p>
<p>2 Name (Dr/Mr/Ms): _____</p> <p>Designation: _____</p> <p>Contact No: _____</p> <p>Email: _____</p>	<p>4 Name (Dr/Mr/Ms): _____</p> <p>Designation: _____</p> <p>Contact No: _____</p> <p>Email: _____</p>

Singapore Polytechnic Graduates' Guild



Legend

- Bus stop
- MRT train track
- Overhead bridge

Bus Stop A:
SBS 33, 196

Bus Stop B:
SBS 96, 151, 151A,
196, 196A, 183,
183A, 151E

Address : 1010 Dover Road (At Gate 4 of Singapore Polytechnic)