What is RoboCup Junior?

RoboCup Junior is a project-oriented educational initiative that sponsors local, regional and international robotic events for young students. It is designed to introduce RoboCup to primary and secondary school children, as well as undergraduates who do not have the resources to get involved in the senior leagues. The focus in the junior league is on *education*.

RoboCup is an international effort whose purpose is to foster Artificial Intelligence (AI) and Robotics research by providing a standard problem where a wide range of technologies can be integrated and examined. As well, the initiative serves as a basis for project-oriented education.

The ultimate goal of RoboCup is that by the middle of the 21st century, a team of fully autonomous humanoid robot soccer players shall play (and win!) a soccer game against the (human) world champions.



RoboCup Junior offers several challenges, each emphasizing both cooperative and competitive aspects. For children, the Junior initiative provides an exciting introduction to the field of robotics, a new way to develop technical abilities through hands-on experience with electronics, hardware and software, and a highly motivating opportunity to learn about teamwork while sharing technology with friends. In contrast to the onechild-one-computer scenario typically seen today, RoboCup Junior provides a unique opportunity for participants with a variety of interests and strengths to work together as a team to achieve a common goal.

RoboCup Junior History

RoboCup Junior began in 1998, with a demonstration at RoboCup-98 in Paris. The following year, RoboCup-99 in Stockholm exhibited the first interactive workshops. Since, the initiative has grown and in the last year, major events were held in Amsterdam at RoboCup EURO 2000 and the first ever international RoboCup Junior tournament in Melbourne, Australia at RoboCup-2000. In Melbourne, over 100 children participated from 25 schools around Australia, as well as from Germany and the USA. Students entered one of three challenges: soccer, line-following sumo and dance. In addition, over 500 local school children toured the RoboCup venue and learned about the initiative.

Three challenges have been developed:

Soccer

2-on-2 teams of autonomous mobile robots play games in a 90x152cm field color-coded in shades of grey

+ rescue

robots race to rescue victims from artificial disaster scenarios, varying in complexity from line-following on a flat surface to negotiating paths through obstacles on uneven terrain

🛛 dance

one or more robots perform to music, in a display that emphasizes creativity of costume and movement

Visit our web site for details on how to form a RoboCup Junior team, specific rules for each challenge, information on all events, curricular ideas and more!

http://www.robocup.org/junior

RoboCup Junior and Education

More than twenty years ago, the birth of personal computers spawned a new era in the age of technology, and educational applications began to infiltrate classrooms. At the same time, Seymour Papert linked technology with Jean Piaget's constructivist theory of education to produce LOGO (or "turtle geometry"), a simple programming language that allows young students to learn geometry through computerbased exploration. Papert published these ideas in his book Mindstorms and introduced the notion of constructionism — which states that children learn best when they are actively involved in building something that is meaningful to themselves.

Meantime, Howard Gardner put forth his "theory of multiple intelligences", which describes each human mind as a unique combination of talents expressed across a wide range of cognitive spheres. His book Frames of Mind has been extremely influential in the field of education and has helped drive the trend in classrooms towards teamwork and projects that encourage and motivate different children with different needs.

RoboCup Junior aims at bringing together many of these ideas, promoting project-oriented, teambased education, giving children with a variety of interests and abilities an opportunity to pick their own challenges while contributing to the progress of the whole.

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16 – 25 November γοκοήαπα City, Japan RoboFesta Kanagawa International Festival

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28 Way - 2 June Montreal, Canada **LO'stn**93A RoboCup Junior Exhibition

20 - 29 July Kansai, Japan RoboFesta Kansai Japan Championship

7 - 9 September Melbourne, Australia Interact 2001 Australian Finals

