Children learning robotics easily

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Abstract. This paper presents a didactic robotics event where youngsters learn hands-on how to build a robot from scratch. Team of four people can participate, and they need to bring a laptop computer and a sleeping bag. During three days and two nights, they are tought by experienced people with short non boring lessons, the many subjects that they need to build a complete robot. Lessons of simlpe mechanics, electronics, and robot programming are the main ones, but followed by many others about motors, sensors, robotics events, etc.

This is all carried out in an entertaining way, where they can have a break to practice many sports, ludic activities, music, etc. On the last day, they can participate on opcional small competitions, in order to test the robot built, all this with large fair-play, and no competition stress at all. At the end, they take the robot home, which they can use to participate in other competitions like the Robotics National Open or RoboCup, and they can improve the robot performance at school or at home. All 6 editions of RoboParty had full house and booking in advance is required. This is the only robotics competition of this kind, and the main advantages consist of no stress from teachers and students, an optimal learning curve, and above all they get a robot for themselves to continue practicing.

Keywords: Robotics; Children; learning; RoboParty

Brief CV

Fernando Ribeiro was born in Guimarães, Portugal. He took his degree on Computer Science and Information Technology in 1988, lectured at University Portucalense for three years and moved to Cranfield (England) where he took in Master's Degree on Industrial Robotics in 1992 and his PhD on Advanced Manufacturing Technology in 1995. Returned to Portugal to University of Minho in 1995 where he holds a position of Associate Professor since 2003 at the Industrial Electronics Department.

He started in 1997 a Robotics Laboratory and he has since then many students working on Mobile Autonomous Robotics and participates actively on RoboCup with a football team of robots, amongst others. He developed the first Portuguese robotic football team that participated in a competition. He also organizes many robotics events (Local, National and International) like RoboParty, with different scientific challenges, and promotes science and technology. He also organized the first Festival Nacional de Robótica—ROBÓTICA'2001 in Guimarães. He is founding member of the Portuguese Robotics Society, which was created during Robotica'2006, also in Guimarães.

In 2006 he started a spin-off company called SAR - Soluções de Automação e Robótica, which creates and develops robotics and automation projects.

His main areas of research are Mobile and Autonomous Robotics, Automation, Rapid Prototyping. Computer Vision and Image Processing.