Robotic Event Extension Experience

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Abstract. In this paper we present our experiences from extending the Eurobot contest for students of the age up to 30 by a category for pupils up to 18. We show two different models of the extension and present our experiences acquired after implementing them in 2008 and 2009.

1 Introduction

Robotic contests are nowadays popular. At the same time, the increasing power, abilities, and "user-friendliness" as well as decreasing price of components usable for building robots makes them available to broad public, and more and more for younger and younger robot builders. In this paper, we present the Eurobot Autonomous Robot contest and how we have extended it in the Czech Republic also for younger participants. For more details about the rules, participation conditions, discussions and reasonings see [1] and [2].

The following text is organized as follows: in Section 2, we present Eurobot contest. In Section 3, a contest for younger participants is introduced as Eurobot Junior and in Section 4, we present another new category called Starter. In Sections 5 and 6 we give our experiences from the two years when Eurobot + Eurobot Junior (2008) and Eurobot + Starter (2009) contests have been organized in the Czech Republic. Section 7 concludes the paper.

2 Eurobot Contest

Eurobot is an international autonomous robot contest for young non-professional roboticians of the age up to 30 years. Their task is to build an autonomous robot which is able to perform actions defined by the rules. Then, the builders meet for matches with other teams and their robots. In the matches, two robots from two teams compete on a playing field. The core technical rules of the Eurobot contest are: autonomous robots (no remote control allowed); indoor robots with limited size (roughly a 30 cm cube); game on a table (roughly 2 x 3 m); little time for one match (90 sec); fair-play spirit of the game; team work.

While these basic technical rules remain the same, the rest is changed every year; it is therefore easier for new participants to start with Eurobot in contrast with other contests where the rules are fixed and it takes years to reach the top level (see e.g. RoboCup initiative [5]). The changing part of the rules defines the main topic, playing elements etc.: during the years, the robots had for example to build structures from wooden cubes, collect coloured balls, sort waste, or lay down skittles (see the Archives section at [1]).

3 Trophées de Robotique / Eurobot Junior Contest

The Eurobot contest started as a single-category contest. In 2006, Eurobot organizers asked organizers of another contest, Trophées de Robotique, to join Eurobot and open it also for other countries under the name of Eurobot Junior (see [3] and [4]). This category is limited for participants of the age up to 18 years or the end of their secondary school studies. The task is simpler than in the main Eurobot contest; the most significant difference is that the robots are not autonomous but remote controlled. But, the rules are by intention prepared independently, and Junior rules share with Eurobot only the core (see Sec. 2).

4 Starter Contest

In 2007, Czech organizers of Eurobot National Cup organized only Eurobot contest. In 2008, they prepared Eurobot Junior too. For 2009, they decided to run the contest for the younger category like in 2008, however to ease the organization, they decided to use another model: to use Eurobot rules and not to make two different contests. The only change done to Eurobot rules was the non-autonomy of Starter robots (and attributes related to this), the rest of the rules stayed intact. Therefore, the two categories look very similar, because the playing field is the same and most other visual attributes too, and the match goals for the robots are exactly the same. The Starter rules specification can be found at Eurobot Czech web pages (see [2]).

5 Eurobot + Eurobot Junior in the Czech Republic, 2008

For the visitors, both contests were interesting and the whole event was "diverse and colourful" (because of two different playing fields), however it was quite difficult for them to understand the two different rule sets.

The Eurobot and Junior teams stayed separate and concerned only on their respective category matches.

For the organizers, adding Eurobot Junior meant organizing two completely different contests even some external attributes were seemingly similar. For example, the implementation required to translate two sets of rules from English to Czech, build two different playing fields, train two groups of referees etc. During the debriefing, the organizers had to confess they underestimated how different the two contests were to organize.

6   Eurobot + Starter in the Czech Republic, 2009

The nearly same rules for Eurobot and Starter in 2009 created a "compact" event, which was easier for the public to follow and understand. The public also appreciated the kids took part in the same technical and scientific activity as the older participants.

The Eurobot and Starter teams merged together and examined in detail the results of work of the other teams regardless on the category, because all participants had the same goals and therefore the two groups had the same knowledge of what to expect and what to look for. The organizers consider it as a great result, fulfilling one of the goals of Eurobot Association – "to foster scientific and educational exchange between young amateur robotic fans".

For the organizers, making Starter did not bring any additional work to Eurobot, in general the only difference to "Eurobot only" was just bigger number of teams (Starter + Eurobot).

7   Conclusion

In this paper, we have shown the evolution of the Eurobot contest between 2007 and 2009. The experience clearly shows several conclusions:

Firstly, the idea to extend the contest also to involve younger participants was good and eligible.

Secondly, adding the younger category did not only allow younger people to take part and learn from the experienced contestants in the main category, but also has shown that older participants can (and do) gain from the youngsters. Originally, the category for younger participants was introduced because the younger scholars were afraid of competing with university students. It has shown that in many cases this fear is unjustified and even more, in some cases the older students from universities have learnt from the younger scholars!

At third, the organizers of Eurobot contest in the Czech Republic have found out that for small- and middle-sized national cups (currently all except France), the contest model used in 2009 serves better than the model used in 2008 when the two age categories were separated. It might not be the case for big events where plenty of teams participate, because it is not possible for the organizers to run it at the same time on the same place anyway. But for all other national organizing groups where the two categories could be organized together, the advantages are clear and expressive.

References

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