



# RoboCup Junior Dance Rules 2012

RoboCup Junior Dance Technical Committee 2012:

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**These are the official rules for RoboCup Junior Dance event 2012. They are released by the RoboCup Junior Dance Technical Committee. These rules have priority over any translations.** Changes from 2011 rules are highlighted in red. **The score sheets have changed significantly since 2011 so teams should make sure they study the new score sheets.**

## Preface:

Robot dance means that one or more robots and humans come together with music, dressed in costume and moving in creative harmony. The following dance rules provide a framework on how to structure a human and robot dance performance routine.

## 1. PERFORMANCE.

### 1.1. Kind of Performance

RoboCup Junior Dance allows teams to create a 1 to 2 minute creative stage performance using autonomous robots that the teams have designed, built and programmed. Teams can choose to create either a Dance or a Theatre performance.

'Dance' is a performance closely synchronized to the music. The robot(s) and humans are required to move in time to the beat or rhythm of the music selected in the same way that a human may listen to the beat of music and dance to it. The Dance assessment focuses on the choreography and movement of robot(s) and humans synchronization to music beats.

'Theatre' is a performance in which the robots tell a story or develop a theme supported by music. Theatre assessment is focused on the overall theatrical presentation. The performance will be judged by how effectively the robot(s) are used to present a theatrical theme. Examples: Nursery rhymes, Star Wars or movie-inspired presentations, Olympic Games, recycling, etc.

In order to accommodate different performance types, there are two different performance score sheets. The Dance and Theatre score sheets can be downloaded from the official RoboCup Junior website (<http://robocupjunior.org>). Teams are encouraged to refer to the score sheets when preparing their dance or



theatre performances.

Before a RoboCup Junior event, teams must decide which is the most appropriate performance type so that judges can use the right score sheet to assess the performance. The following are some guidelines that can help teams to make that decision (**D- for Dance and T- for Theatre**):

- Music is an integral part of the dance (D) or used as a background to supplement the performance (T)
- Deliberate, accurate and synchronized movement to music (D)
- A theme with a story is the focus of a theatre performance and music just supports it (T)
- The focus is on the choreography (D)

Following a stage performance the judges may suggest a switch in the performance category of Dance or Theatre.

## 1.2. Duration

1.2.1. Each team will have a **total of 5 minutes** for their presentation. This time includes stage performance set-up, introduction and the performance, including any re-starts due to factors under the teams' control. It does not include time needed for packing up and clearing the stage.

1.2.2. Following each performance, a team must fully tidy up the stage, pack up and remove any objects related to their performance. The performing team has a maximum of one minute to clear the stage after the end of their performance.

1.2.3. The duration of a performance routine must be no less than 1 minute and no more than 2 minutes.

1.2.4. If a team exceeds the time limits explained in 1.2.1, 1.2.2 and 1.2.3 the team will be penalized **by the loss of marks**. A judge starts a stopwatch when a team member steps a foot on the stage for the maximum five-minute period **and following 1 minute to clear the stage**. **If the time limit is exceeded due to circumstances outside the team's control (for example problems with starting the music by the technicians) there will be no time penalty. The judges have the final say on any time penalties.**

## 1.3. Music

1.3.1. Teams must provide their own audio music source. **The preferred transport method is to place the sound file on a memory stick as a MP3 file. The memory stick should be clearly labeled with the team name and category (primary or secondary) and should hold only the MP3 file.** It is essential that the music should be given to the RoboCup officials acting as sound technicians before the team's practice period. Teams are encouraged to bring multiple copies of the audio source file.

1.3.2. Teams are strongly encouraged to bring a good quality audio music source file since their evaluation also depends on the music quality.

1.3.3. The music should start at the beginning of the audio music source with a few seconds of silent lead time.



1.3.4. It is the responsibility of the team to ensure that the music is playing correctly before their first performance by liaising with the RoboCup officials.

## 1.4. Human Team Members

1.4.1. Human team members are encouraged to perform with their robots. There is no penalty for humans not performing with their robots.

1.4.2. The only physical contact humans may have with their robots is to start the robot(s).

1.4.3. When **physical** contact between a human and a robot is a part of the performance this has to be discussed with and approved by the judges BEFORE the performance to ensure all the robotic performance is autonomous.

1.4.4. The maximum recommended number of 'human' members allowed on each team is 10; the minimum is 2. Any deviation from these numbers must be referred for adjudication to the Chief Judge before registration.

1.4.5. All team members must be the correct ages for the primary and secondary categories as state on the RCJ website <http://rcj.robocup.org/about.html> under "Ages".

## 1.5. Scenery

1.5.1. Teams are encouraged to provide their own scenery. Organizers will try their best to provide a projector and a projection screen for teams wishing to incorporate a visual or multimedia presentation as part of their performance.

1.5.2. Teams should ensure that any visual or multimedia presentation is being displayed correctly before their first performance by liaising with the RoboCup officials.

## 1.6. Performance routine

1.6.1. Each team may perform one and only one Dance or Theatre performance routine. The same performance routine will be repeated if they proceed to the finals in their division. Some minor modifications (improvements) of the performance using the same music may be accepted. Any questions or concerns on performance and/or robot modifications at the venue should be discussed with the Chief Judge.

1.6.2. A RoboCup official will start the music and the audio visual/multimedia presentation for the routine.

1.6.3. One human team member or several members using multiple robots and props may start each robot, either by hand or remote control.



1.6.4. Teams are strongly encouraged to program their robot to begin the performance routine a few seconds after the music starts as it is extremely difficult to judge precisely when the music will sound after the audio source is started. **Teams may find it useful to include a “beep” at the beginning of their music as a start signal.**

1.6.5. Depending on the configuration of the dance stage and the sound system at the venue, it is possible that the human starting the robot will not be able to see the RoboCup official starting the audio source; and vice versa. Teams should come prepared for these conditions.

## 1.7. Restarts

1.7.1. Teams are allowed to restart their routine if necessary, at the discretion of the officials. Unless a problem is not the fault of the team, any restart will result in a score penalty. **There is no limit on the number of restarts a team can perform within their 5 minutes performance time. Team will be asked to leave the stage after 5 minutes.**

## 1.8. Security & Safety

1.8.1. In order to protect participants, RoboCup officials and bystanders, routines may not include explosions, smoke or flame, use of water, or any other hazardous substances.

1.8.2. Each team whose routine includes any situation that could be deemed hazardous, including the possibility of damaging the stage, must submit a report outlining the content of their dance routine to the chief judge BEFORE **arriving at** the competition. The Chief Judge may also request a demonstration of the activity before the stage performance. Teams not conforming to this rule may not be allowed to present their routine.

1.8.3. **In no circumstances is mains electricity allowed to be used on stage. This includes the use of mains electricity for robots, scenery and props.**

## 1.9. Content

1.9.1. Any performance that includes violent, military, threatening or criminal elements will be excluded. Any team using an inappropriate name or logo will also be excluded. Participants are asked to carefully consider the wording and messages communicated in their presentations. What seems acceptable to one group may be offensive to friends from a different country or culture.

## 1.10. Stage setup time

**Teams are encouraged to use the time whilst they are setting up the stage for their performance to introduce to the audience the features of their robots, technology used and highlights of the robotic performance and to introduce their team.**



## **2. STAGE**

### **2.1. Size**

2.1.1. The size of the performance stage area will be marked in a rectangular area of 6 x 4 meters(m) for robots with the 6m side facing the judges. If the whole body of a robot (main body of robot not including any large extensions from the body) moves outside the marked boundary of the performance area the team will receive a penalty score. **If in doubt please consult with the Chief Judge for clarification of “robot body” in relation to your robot design.**

2.1.2. Human performers may be inside and outside the marked area.

2.1.3. The boundary of the performance stage area will be marked with a 50 millimeter (mm) black tape line, surrounded by a 20mm red tape line. This can also allow teams to use the black and red line tape boundary to program a robot to identify the performance stage area.

### **2.2. Surface**

2.2.1. The floor provided shall be made of flat (non-glossy) white painted MDF (compressed wood fiber).

2.2.2. While floor joints will be taped to make them as smooth as possible, robots must be prepared for irregularities of up to 3 mm in the floor surface.

2.2.3. Teams are encouraged to practice on the same flooring type to have a better simulation for robot conditions and reduce the set-up time at the RoboCup Junior competition.

### **2.3. Lighting**

The RoboCup organizers will endeavor to make variable lighting including spotlights available. Teams should not expect the performance stage area to necessarily be able to be darkened. We cannot guarantee direct or intense spotlights to be available. It is recommended that teams design their robots to cope with variations in lighting conditions, as lighting naturally varies from venue to venue. Teams should come prepared to calibrate their robots based on the lighting conditions at the venue.

### **2.4. Performance Stage Utilization**

2.4.1. The main performance dance stage will be made available for teams to practice on. In fairness to all teams who may wish to practice, a booking sheet will be used to reserve the stage for a short practice time.

2.4.2. The last team to practice on this stage before performance time starts must fully clean up the stage and clear the stage area at least 3 minutes before the performance start time.



## **3. ROBOTS**

### **3.1. Size**

Robots may be of any size. Any robot(s) or prop(s) taller than 4 meters from the stage floor must be discussed with the judges and permission sought.

### **3.2. Team**

There may be any number of robots on a team. However, using multiple robots does not necessarily result in obtaining higher points.

### **3.3. Control**

3.3.1. Robots must be controlled autonomously. No member of the team may make physical contact with the robot during its performance UNLESS it has been discussed and approved by the judges PRIOR to the performance.

3.3.2. Robots may be started manually by human contact or with remote control at the beginning of the performance. See also 1.6.3.

### **3.4. Robot technology**

Any technology can be used to create the robots. Teams are encouraged to use the technologies creatively. Innovative or unusual use of technology including sensors are encouraged and will be rewarded. For example laptops, notebooks, mobile phones, tablet PCs and other similar devices MAY be used as robotic controllers but no mains power should be used while on stage. Teams are encouraged to use technology in unusual, innovative or inspired ways to create an engaging performance. If you are unsure whether the technology you are using is appropriate please contact the Chief Judge before the competition.

### **3.5. Costumes**

Costumes for robots and human performers are encouraged, and points will be awarded.

### **3.6. Communication**

3.6.1. During the performance, any robot on stage may communicate with another robot on stage from the same team. **There must be no communication with off-stage devices.** The source of communication must be infrared (IR), Ultrasonic or Bluetooth. It is the teams' responsibility to be aware that their communication does not interfere with other teams' robots when practicing or performing.



3.6.2. No team is permitted to use radio frequency (RF) signals like WLAN wireless communication, as this may interfere with robots in other leagues. Teams with robot communication MUST explain the device as well as the program to the judges at the interview.

## **4. JUDGING**

The performance and technical score sheets can be downloaded from the official RoboCup Junior website (<http://robocupjunior.org>). There are different performance scoring sheets for the Dance and Theatre categories.

All teams will be given 2 opportunities to perform their performances before the judges. The highest performance score will be added to the technical interview score to calculate the total score.

### **4.1. Authenticity and Originality**

4.1.1. The performance is to be unique. Teams who, in the opinion of the judges, have knowingly produced duplicate robots, costume or performance movement (duplicate music is allowed) of another team or reused previous year's robots of the same team will be interviewed by a panel of three Dance officials. Penalties range from score reduction to a maximum penalty of exclusion from the competition.

### **4.2. Creativity**

The Dance challenge is intended to be very open-ended! Teams are encouraged to be as creative and entertaining as they can. Teams who show creativity and innovation will be rewarded high point scores in the relevant sections.

### **4.3. Judging Categories**

Stage performances and technical interview will be judged using the published score sheets. Teams are encouraged to study the score sheets during the preparation for their performance to maximize their scores.

### **4.4. Technical Interviews**

4.4.1. All teams will have a 15 minute technical interview during the competition. Teams should ensure that they have read the interview score sheets.

4.4.2. Teams should ensure that they bring all their robots, props and copies of the programs to their technical interview. They should be prepared to demonstrate and discuss the use of any sensors, electronics and technology that they have used.



4.4.3. A Robotic Dance Technical Sheet should be completed by teams and handed into to the dance organizing committee as soon as possible during the competition. The Robotic Dance Technical Sheet will be posted online with the score sheets.

4.4.4. Interviews will take place in English, if teams require a translator they should inform the local organizing committee by e-mail prior to the event to allow translators to be organized.

4.4.5. If the schedule allows for it, teams that make it through to the finals may be asked to have a second technical interview.

## 4.5. Awards

Note: Rules 4.5.1 and 4.5.2 are not obligatory for national events.

4.5.1. Awards will be given to individual teams in the following categories:

Programming;

Construction;

Using Sensors;

Choreography;

Costume;

Entertainment Value ;

Electronics.

These awards will be awarded based on both the team performance and technical interview upon the discretion of the judges.

4.5.2. There will also be some special awards for the following categories:

Collegiality Award (the team who, by popular vote, has given the greatest support to other teams) -- this support can be demonstrated in a number of ways, such as providing assistance with components, developing friendships and/or giving encouragement to other teams). The vote described in section 6.4.2 will be used for selecting the best Collegiality Award.

Best Poster or Best Electronic Demonstration -- See also 5.2.

Novice Team Award -- The primary and the secondary team placed highest in the competition overall **and have not received another award**, and where ALL members of the team are competing at RCJI for the first time (this does not include a team having a team member(s) who has (have) competed in other RCJI categories).

4.5.3. There will be three RCJI Dance Champion teams for the primary division, and three RCJI Dance Champion teams for the secondary division. The winners of each of these two divisions are the teams that achieve the highest total score as determined by combining the interview and their best performance score. Dance and Theatre performances will be regarded as one league.

4.5.4. No one team shall receive more than 3 awards excluding the Super team awards.



4.5.5. RoboCup Junior is an educational project. It is important that team members learn from their experiences with RCJI, and have the opportunity to improve in later years if they so choose. The organizers will provide feedback on each team's performance at the conclusion of competition. The sheet will indicate to the team their areas of strength and also areas needing improvement. It is important to note that these sheets are not to be used to debate positions, decisions or competition scores with the judges.

## **5. DOCUMENTATION**

### **5.1. Authentication**

All teams are encouraged to bring paper or digital documentation describing their preparation efforts **including photographs of the different stages of robot development**. The documentation should be no more than equivalent of 5 pages (A4 size). The documentation must be presented during the interview, and may be called upon to help establish the authenticity of a teams' performance. Team should also complete the Robotic Dance Technical Sheet before the interview.

### **5.2. Presentation Displays**

5.2.1. Teams will be given some public space to display their materials on a poster board. Since the space available could be limited by the local organizers, teams are encouraged to bring some kind of electronic presentation in Power Point and/or other electronic format that will be displayed in the venue. The organizers will provide screening equipment. The size of the area available for a team's presentation will be announced prior to the event.

5.2.2. Posters or electronic presentations should be made in an interesting and entertaining format, as they will be viewed not only by the judges, but by other teams and the visiting members of the public. The presentation should provide information about the team and how you developed the robot(s) for the international event. Areas that need to be covered include: team name, division (primary or secondary), team members' names (and perhaps a picture of the team members), your country, your location in your country, a little about your district and school, pictures of the robot(s) under development, and information about your robot and team. Include any interesting or unusual feature about the team, robot, your background or your entry.

5.2.3. A prize will be awarded to the team with the most outstanding presentation (either poster or electronic). Please refer to section 4.5.2 for Presentation Award.

## **6. CODE OF CONDUCT**

### **6.1. Spirit**

6.1.1. It is expected that all participants, students and mentors, will respect the RoboCupJunior mission. In addition, participants should keep in mind the values and goals of RoboCup Junior.



6.1.2. It is not whether you win or lose, but how much you learn that counts. You will really miss out on a lifelong learning experience if you don't take this opportunity to collaborate with students and mentors from all over the world. Remember this is a unique moment!

## **6.2. Fair Play**

6.2.1. It is expected that the aim of all teams is to participate in a fair and clean competition.

6.2.2. Humans that may cause deliberate interference with robots or damage to the stage will be disqualified, if part of a team. If not part of a team they will be ask to leave the venue.

6.2.3. The team is responsible for removing all debris left from their routine that may interfere with the performance of subsequent activities.

6.2.4. Remember: Helping those in need and demonstrating friendship and cooperation are the spirit of RoboCupJunior as well as for making a better world.

## **6.3. Sharing**

6.3.1. It is understood that RCJI events with rich technological and curricular developments should be shared with other participants after the competition.

6.3.2. Any developments may be published on the RoboCupJunior Web site following the event.

6.3.3. Sharing information furthers the mission of RoboCup Junior as an educational initiative.

## **6.4. Collegiality**

6.4.1. In keeping with the spirit and collegiality aspects of RCJI, a party will be provided by the organizers for all team members, mentors and supporters. It is strongly requested that all such individuals delay their departure sufficiently to attend, even if the party is held after the finals and presentations. The organizers request all team members bring business-sized cards to share with other teams at the party. These cards could include the team name, its members' name(s) and contact details, so students can remain in contact with each other after the event. This is optional, but encouraged. It is also requested, but not compulsory, for team members to wear either national dress, or some icon that identifies them with their country. This can be done in a humorous manner, such as an animal mascot from their country or another creative idea.

6.4.2. Each participating team will have one vote to nominate the team that displayed the greatest cooperative interactions and shared support with other teams. Please refer to section 4.5.2 for Collegiality Award.

## **6.5. Behavior**

6.5.1. All movement and behavior is to be of a subdued nature within the event venue.



6.5.2. Competitors are not to enter set-up areas of other leagues or other teams, unless expressly invited to do so by other team members.

6.5.3. Participants who misbehave may be asked to leave the building and risk being disqualified from the event.

## **6.6. Mentors**

6.6.1. Mentors (defined as teachers, parents, chaperones or any other non team-member) are not allowed in the student work area except to assist carrying equipment in or out of the area as teams on the arrival and departure days.

6.6.2. If a problem is encountered with a computer or other device that is clearly beyond the reasonable ability level of a student to repair, a mentor may request permission from the organizers to enter the work area for the sole purpose of advising on that repair. They must leave the work area immediately after this is completed. Rule 6.6.1 still applies at these times.

6.6.3. Mentors are not allowed to set up such equipment on stage, as this should be the responsibility of team members. Organizers will assign volunteers to teams that need an assistant for stage set-up. Teams should request this assistance to the officials.

6.6.4. A mentor found in the student work area without an acceptable reason may lose his/her access to the venue and the team marks will be penalized.

6.6.5. A mentors found to be involved with mending, building or programming the robot(s) may lose his/her access to the venue and the team marks will be penalized.

## **6.7. RoboCup Officials**

6.7.1. The referees and officials will act within the spirit of the event.

6.7.2. Interviews will be judged by at least two RoboCup officials. Stage performances will be judged by a panel of at least three officials. One of the performance judges is the RoboCup official who judges the interview as well.

6.7.3. The RoboCup officials shall not have close relationship with any of the teams in the age-group they judge.

## **6.8. Information about the event**

Teams will be responsible for checking the updated information during the event. The updated information will be provided on notice boards in the venue and (if possible) on the RoboCup website. The information will be

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announced at the beginning of the event and will be posted on the notice boards as well. Newsletters will be disseminated during the event to ensure teams and mentors have the latest information.

Queries regarding the rules or their interpretation may be sent to the Chairman of the Technical Committee for Dance, Nicky Hughes (UK) at [n.a.hughes@btinternet.com](mailto:n.a.hughes@btinternet.com).