RoboCup 2023 Submission Survey

Survey response 1

Software

Team Name
ICHIRO ITS

Is your software fully or partially OpenSource. If so, where can it be found:
Partially. It can be found at https://github.com/ichiro-its

Do you have a kinematic or dynamic model of your robot(s)? If so, how did you create it (e.g. measure physical robot, export from CAD model)?
Yes. We export from CAD and inventory model

Are you using Inverse Kinematics? If so what solution (analytic, (pseudo)inverse jabcobian, etc...) are you using?
Yes. Based on DARwIn-OP 2 Robot.

Are you simulating your robot? If so what are you using simulation for?
No

What approach are you using to generate the robot walking motion?
We use the Darwin-OP walk controller with our own additions

What approach are you using to generate motions for standing up?
We use manual keyframe animations for our standing-up motion

What approach are you using to generate kicking motions?
We use manual keyframe animations for our kicking motion

Do you use any other motions than the previously mentioned? If so, what approaches are you using to generate them?
We also use keyframe animation for any motions that we use for the technical challenge, such as parkour

Which datasets are you using in your research? If you are using your own datasets, are they public?
We use our own (private) and also bit bots team datasets.

What approaches are you using in your robot's visual perception?
We use object detection. For distance estimation, we use simplified IPM by using the head's pan and tilt values.

Are you planning with objects in Cartesian or image space? If you are using Cartesian space, how do you transform between the image space and cartesian space?
We are mostly using image space for our planning. However, we estimate the ball's cartesian position using regression based on the robot head's tilt and pan while the robot is tracking the ball

How is your robot localizing?
We use a simple approach based on the distance to the goals with triangulation between the two goalposts.

Is your robot planning a path for navigation? Is it avoiding obstacles? How is the plan executed by the robot (e.g. dynamic window approach)?
We are still applying the pan tilt value of the servo at the robot's head as a determinant of the robot's path parameter value

How is the behavior of your robot's structured (e.g. Behavior Trees)? What additional approaches are you using?
We use a simple state-machine approach

Do you have some form of active vision (i.e. moving the robots camera based on information known about the world)?
Yes, we move the robot's camera based on the ball's position to track the ball while moving.

Do you apply some form of filtering on the detected objects (e. g. Kalman filter for ball position)?
Not yet

Is your team performing team communication? Are you using the standard RoboCup Humanoid League protocol? If not, why (e.g. it is missing something you need)?
Yes. We are still using the standard RoboCup Humanoid League protocol

Please list contributions your team has made to RoboCup
We already took part in technical challenges and became the referee in the 2022 RoboCup match

Please list the scientific publications your team has made since the last application to RoboCup (or if not applicable in the last 2 years).
Doesn't exist yet, but is working on a draft related to robot pose perception

Please list the approaches, hardware designs, or code your team is using which were developed by other teams.
We use reference design for TTL servo communication from the Bitbots team. We have also referenced Rhoban's smooth spline interpolation that we plan to implement in our robot's motion.

What operating system is running on your robot and which middleware are you using (for example Ubuntu 22.04 and ROS2 Galactic)?
Ubuntu 20.04 and ROS2 Foxy

Is there anything else you would like to share that did not fit to the previous questions?

If you have a description document of your software you would like to share, you may do so here.

filecount - If you have a description document of your software you would like to share, you may do so here.
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