Software Survey 2026

Team name

RO:BIT(RO:BIT_1)

Which division(s) are you applying for? If your used software differs between divisions, please fill out the survey once per division.

Large Size (height < 190 cm, weight < 80 kg)

Is your software fully or partially OpenSource? If so, where can it be found?

Some are open source. You can check them out here.

: https://github.com/ROBIT-KOR-teamHumanoid/

Are you using any software developed by other teams? If so, list every component that you are reusing and the team that originally developed it.

X

Are you using any datasets in your research? If you are using your own datasets, are they public?

we use private our datasets.

Please list the scientific publications your team has made since the last application to RoboCup (or if not applicable in the last 2 years).

Model-based Walking and RL-based Walking for Humanoid Kid size

Are there any other contributions you would like to share with the RoboCup community?

X

Which approach are you using to generate the robot walking motion?

We are using an approach that combines Deep Reinforcement Learning (DRL) and sensor-based real-time control.

Which approach are you using to generate other motions of the robot (e.g. kicking, standing up)?

It uses imitation learning and whole-body control technologies as its core technologies.

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

export from Autodesk Inventor

What approaches are you using in your robot's visual perception?

We use ZED Mini to recognize objects and YOLOv8 to turn learning to recognize balls.

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?

After recognizing the object in the image space, we plan the object in the Cartesian space using the camera coordinate transformation method.

Do you have some form of active vision (i.e. moving the robots camera based on information known about the world)?

Implement active vision with pan-tilt control.

What approach are you using to localize your robot?

We identify the feature points of the map by spraying particles and then determine the robot's current location by distance calculation.

Is your team performing team communication? Which communication protocol are you using?

we perform team communication using the standard RoboCup Humanoid protocol.

What approach are you using for navigation? Are you avoiding obstacles?

We classified the robot as a bounding box with a camera and set it to be recognized as an obstacle to create a master to avoid.

How is the behavior of your robots structured? (e.g. Behaviour Trees)

We used the task planner node to divide the case about what actions the robot should perform in each case.

Are you simulating your robot? If so, which simulator are you using and for what purpose do you use simulations?

We use IsaacSim 4.5.0 and Mujoco. IsaacSim is used for gait policy training, and Mujoco is used for robustness verification via Sim2Sim transfer.

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

ubuntu 22.04 and ROS2 humble

Is there anything else you would like to share that did not fit any previous question?

X