

Software Survey 2026

Team name

whIRLwind Amsterdam

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

Middle Size (height < 125 cm, weight < 25 kg)

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

Our software is currently not open source, but we are planning on going fully open source in the future.

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.

We are not using code of any other team.

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

We are using AMASS, COCO, and some custom datasets that are currently not public.

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

* Distillation Techniques for Network Reconstruction in Adaptive Systems
(<https://www.dutchnaoteam.nl/publications/2025/Weerheim2025.pdf>)

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

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

Reinforcement learning

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

Reinforcement learning

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)?

We are using the provided URDF file from Booster Robotics

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

Custom transformer-based network trained on a custom dataset.

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?

Cartesian space. Transforms are done using projections from RGB-D images.

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

Yes, we have moving ball tracking/prediction.

What approach are you using to localize your robot?

Iterative landmark matching with an unscented Kalman filter.

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

We are using our own encoding scheme inspired on Protobuf

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

RRT* for path finding and obstacle avoidance.

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

Behaviour trees, that uses a combination of expert systems and RL behaviours.

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

We use MuJoCo for training and simulating our framework.

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 with ROS2 Humble

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