# Software Survey 2025

## Team Name

THMOS□Adultsize□

## Is your software fully or partially OpenSource. If so, where can it be found:

No

## 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)?

measure physical robot, export from CAD model

## Are you using Inverse Kinematics? If so what solution (analytic, (pseudo)inverse jabcobian, etc...) are you using?

Yes, Inverse jabcobian

## Are you simulating your robot? If so what are you using simulation for?

yes, we used issac lab to training motion control using RL

## What approach are you using to generate the robot walking motion?

RL

## What approach are you using to generate motions for standing up?

RL

## What approach are you using to generate kicking motions?

RL

## Do you use any other motions than the previously mentioned? If so, what approaches are you using to generate them?

RL

**Which datasets are you using in your research? If you are using your own datasets, are they public?**

we used pictures of playground and balls, they are not public

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

Yolo

**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?**

image space

**How is your robot localizing?**

We first use yolo to identify corner points, and then obtain the position information of corner points, and make map matching to estimate our position on the court. Then particle filter is used to fuse the visual odometer information obtained by binocular camera and output the position

**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)?**

No.No

**How is the behavior of your robot's structured (e.g. Behavior Trees)? What additional approaches are you using?**

State Machine

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

We moved robot camera according to ball localization.

**Do you apply some form of filtering on the detected objects (e. g. Kalman filter for ball position)?**

Kalman filter for ball position

**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.Yes

**Please list contributions your team has made to RoboCup**

Our team has participated in the RoboCup Humanoid League (kid-size) for nearly a decade, achieving notable successes and steadily expanding with new members

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

None

**Please list the approaches, hardware designs, or code your team is using which were developed by other teams.**

None

**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 Galactic

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

None

**If you have additional materials you would like to show, please link to them here.**

None