

Activity 4: Go to Parent

1 Overview

You will create two functions and a behavior for this activity. They will be used to either turn to or head towards a parent.

The first is `faceNbr(nbr)` which takes a `nbr` tuple as an input and outputs the behavior tuple (active, tv, rv). You will use the function `behControl.nbrGetNbrBearing(nbr)` and then employ a series of if/elif statements to make decisions on which direction to turn based on your robot's bearing compared to its neighbor.

The second is `followNbr(nbr)` which takes a `nbr` tuple as an input and outputs the behavior tuple (active, tv, rv). This function will be very close to the first function but instead of staying put and turning, you will head to the robot.

The behavior will be called `greetNbr()`. It will be chose the first `nbr` from the `nbrList`, and pass into one of the two functions. It will then take the output of that function and return it, like any other behavior.

We are introducing only one function for this activity.

1. `behControl.nbrGetNbrBearing(nbr)`: Gets the bearing of the robot to the input neighboring robot. Input: `nbr` - Chosen neighboring robot Output: bearing - the displacement (in radians) from the front of the robot to the neighboring robot.

2 Task

2.1 `faceNbr`

Your first task is to create function that will turn the robot to whatever `nbr` is past into it. You will need to use a series of if/else statements to chose which direction you want to turn. REMEMBER the robots are not precise, you should have a range at which the robot is happy with, else you will be turning left and right and will not stop.

2.2 `greetNbr`

You will need to grab the first `nbr` in the `nbr` list and pass it into `faceNbr(nbr)`. Then you will need to return the output of this function. It does not matter if the `nbr` chosen is the right parent, we will worry about that later.

2.3 Implement `faceNbr`

Please implement `greetNbr()` and show it to one of the teacher assistants. We will give you a source robot that we want you to face.

2.4 `followNbr`

This function will be very similar to `faceNbr(nbr)`. The only difference is that this function will move towards the parent.

2.5 Implement `followNbr`

Please implement `followNbr(nbr)` as you did in taks 2.2 and show to a teacher assistants