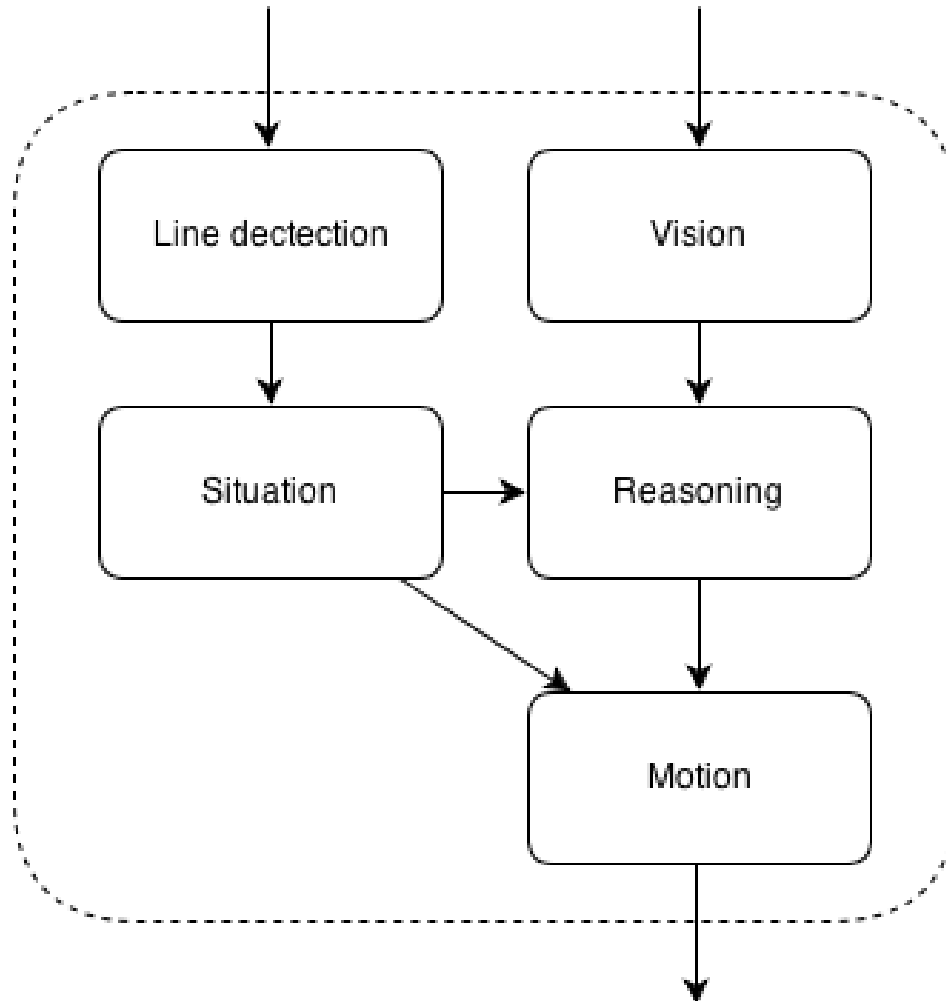


Embedded motion control

The a-MAZE-ing Pico robot

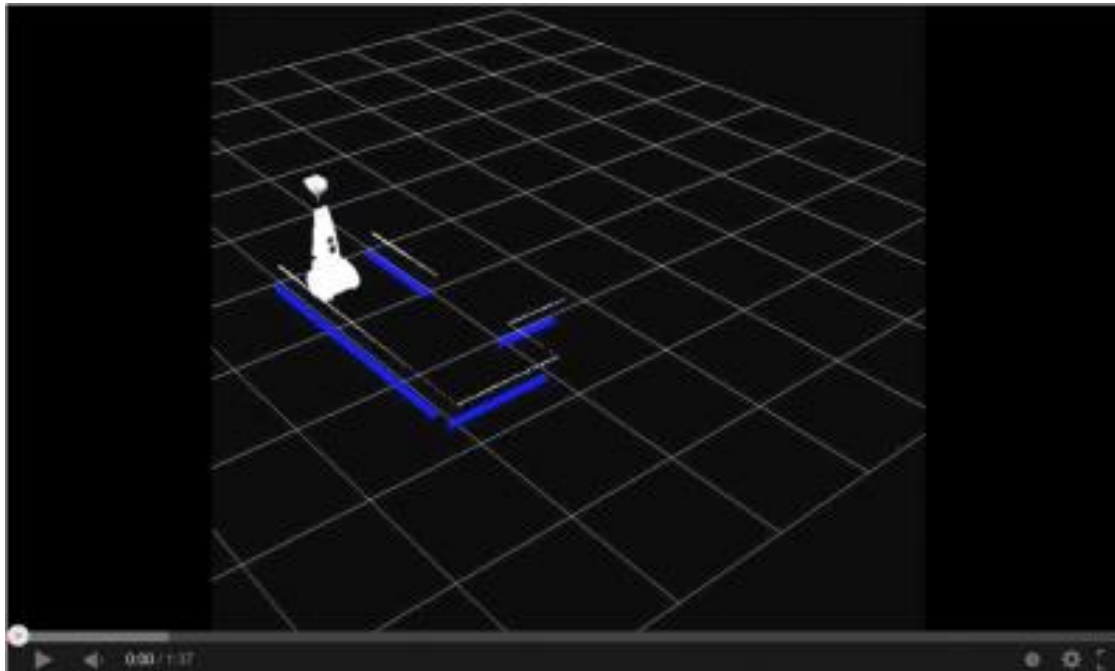
Group: EMC01

Software set-up



Line detection

- **Input: laser data**
- **Method: Hough transform**
- **Output: a message containing the begin and endpoints of detected lines**

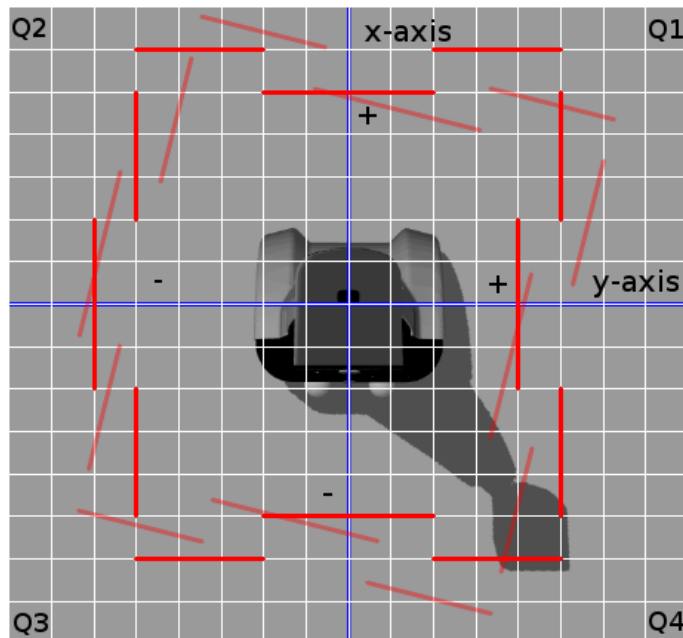


Vision

- **Input:** Image of camera
- **Method:** template matching by Opencv using match_methode 4
- **Output:** 2 booleans for a detected arrow

Situation

- **Input:** Detected lines
- **Method:** Categorize lines according to location, using a bitmask
- **Output:** Localization data (position in the corridor)
Situation data (upcoming waypoints)



Reasoning

- **Input:** **Upcoming waypoint
Detected arrow**
- **Method:** **Follow arrow or the right-hand wall**
- **Output:** **Desired direction message**

Motion

- **Input:** **Desired direction message**
 Odometry data
 Location in the corridor
- **Method:** **Rotations are executed ‘blindly’**
 Driving angle corrected with PD-feedback
- **Output:** **Velocity vector**