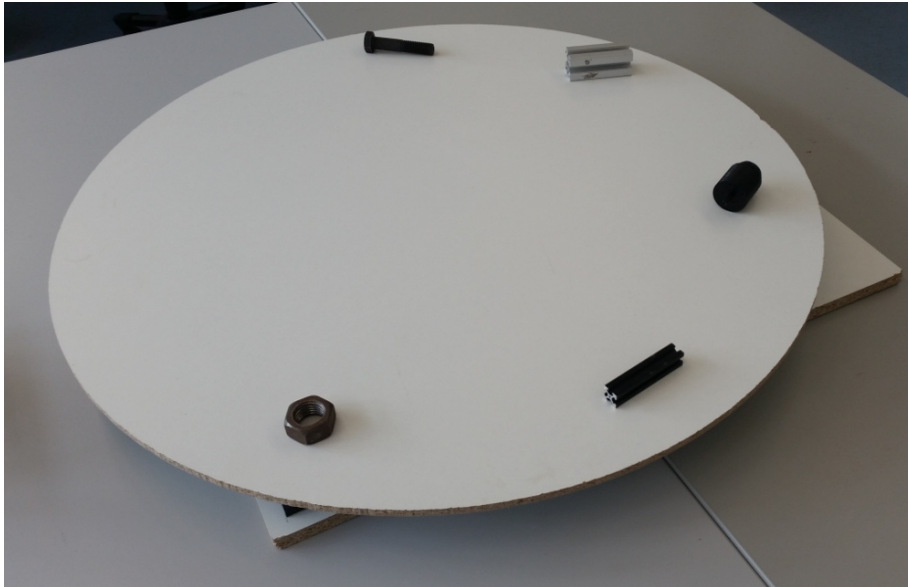


Rotating table Project Robohub Eindhoven



Backstory:

In a Robocup@work arena there are multiple kind of service areas, including the rotating table. Thus far the rotating table is not implemented in RoboHub Eindhoven's Robocup@work robot Suii. Since the rotating table comes with some extra challenges compared to a normal static table. During this challenge objects must be picked from the table and placed on top of the robot.

What do we want:

To score more points in the Robocup@work competition, we want Suii to be able to pick objects from the rotating table.

- **[MUST]** Picking moving objects from a rotating table
- **[MUST]** Measure rotating speed of the table without touching it.
- **[MUST]** Table needs to be made
- **[MUST]** Research on how to track non-static objects with a non-static camera
- **[MUST]** Documentation about your code including diagrams
- **[COULD]** Implementation in Suii's statemachine

The end product:

- Implemented code for handling the rotating table
- The documentation has to be done in Markdown or AsciiDoc so it can be published on GitHub
- The end product has to be on GitHub where the actual workflow can be followed
- A class and data flow diagram of the software.
- A demo for the team when the project is finished.

Known hard parts:

- Picking objects from the rotating table:
 - How to track a non-static object with a non-static camera
 - How to determine the speed of the object
 - How to determine what path the UR has to move

Project requirements from Fontys:

- Money: Expected 0 eu (parts for making a test table should be ordered)
- To get it working you will need 2 motivated people that want to learn about 2D vision and the robotic arms. For implementation into the state machine a student with experience in software is recommended.
- It should be doable on the laptops of the students (Ubuntu 18.04 LTS OS).