Scenario and Evaluation Algorithms

Hendrik Oestreich, Andreas Gatting, Timo Michalski, Julian Daberkow
Julian Exner, <further Authors>
University of Bielefeld

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1. Scenario

1.1. Setup

1.2. Tracking Tool

The tracking tool consists of four independent optical cameras, which are mounted to the ceiling and face towards the ground. Each camera provides a resolution of 1000×1000 pixel, bringing the total resolution to 2000×2000. A sample picture can be seen in Figure 1. Markers are glued to the objects that are to be tracked. Multiple objects can be tracked simultaneously. Each camera generates independent tracking data, which can be stitched with the other cameras' tracking data in the post processing step. Each entry in the tracking data contains the following elements:

- Timestamp.
- Boolean value of either 0 or 1 depending on whether a certain marker was detected.
- The marker number.
- X-coordinate.
- Y-coordinate.
- Turning angle.

X and Y-coordinates are given in pixel values that correspond to the marker position.

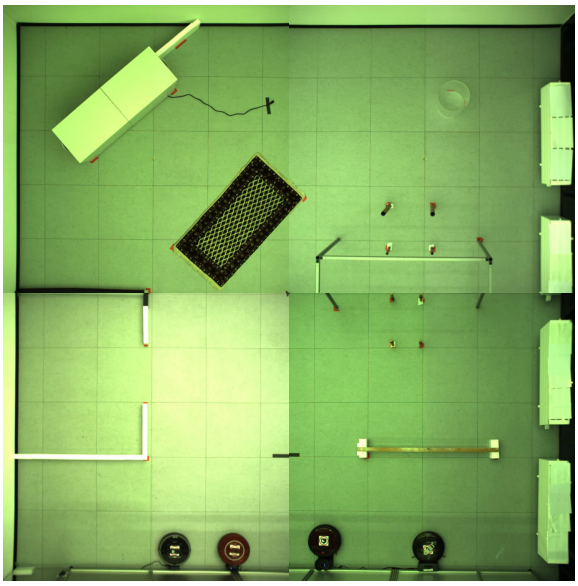

Figure 1: *Exemplary camera picture.*

1.3. Execution

2. Evalution Algorithms

2.1. Group 1

2.1.1 Preprocessing of tracking data

2.2. Distance

2.2.1 Duration

2.2.2 Coverage

2.2.3 Heatmap

2.3. Group 2

2.3.1 Preprocessing of tracking data

2.3.2 Heatmap

2.3.3 Histogram